BACK TO 1983

12 MONTHS OF GAMING

A RETRO CELEBRATION SYSTEM
SPY HUNTER • STAR WARS
MANIC MINER & MORE

BACK TO THE EIGHTIES

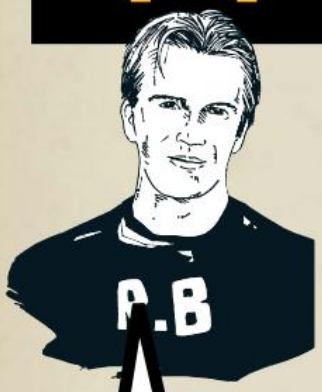
CHARTS

JANUARY 1983

INTELLIVISION

1. Dungeons & Dragons (Mattel)
2. Sub Hunt (Mattel)
3. Night Stalker (Mattel)
4. Lock 'n' Chase (Mattel)
5. Utopia (Mattel)

»[Spectrum] Imagine Software's first release was *Arcadia*. Shoot waves of fiendish enemies. Damn you wobbly pin level!



JANUARY 1983 – MB Games consoles itself, Nintendo plans own games machine, Imagine born, issue one of Page 6, the second coming of Horace and Ms Pac-Man and Atari finally gets it right. Richard Burton pops a power pill and feels fine…

THE LATEST NEWS FROM JANUARY 1983

News came rumbling from across the Atlantic that General Consumer Electronics, producers of the innovative Vectrex console, was on the verge of being bought out by Milton Bradley. Whilst this was bad news for GCE, it signified the possibility of the Vectrex finally making its way to Europe. It arrived in the UK in May and Japan a month later.

Having been released just two months ago in the USA, the Vectrex sold relatively poorly. Sadly, this was more to do with the impending videogames crash in North America than any shortcomings of the Vectrex itself. Having brought us the first vector graphics-based console (and the first to feature a 3D peripheral), it was discontinued approximately 18 months after release. It was short-lived but has since become a timeless retro gaming classic, and deservedly so.

Despite having produced fantastic arcade games over the last few years, rumours were rife that Nintendo were looking to produce their own cartridge-based games console. The rumours were correct, and the Family Computer/Famicom was released in Japan in July. After an initial slow uptake of the new console, not helped by the chip set causing the early production runs to crash, the Famicom was recalled and given a brand new chip set. It flourished on re-release. The UK finally got its own version, the Nintendo Entertainment System (NES) just over three years later.

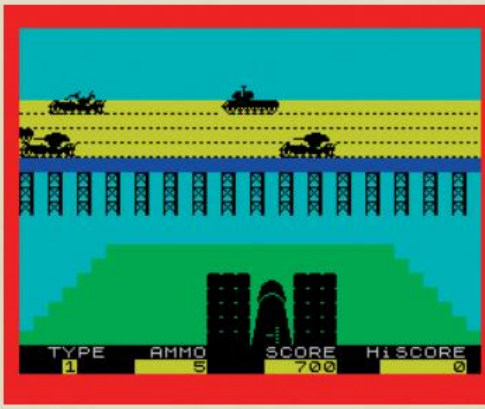
Key staff members left the Liverpool based software house, Bug-Byte, to make the short migration down the road to set up their own software house. Dave Lawson and Mark Butler formed Imagine Software and announced the release of their first game, a colourfully frenetic shoot-em-up for the VIC-20 and Spectrum entitled *Arcadia*, with ongoing plans to release two further titles every month.

At present Imagine's software would only be available via mail order with no plans to expand into retail. Conversely, Bug-Byte announced that they had decided to shut down the mail order side of their operation in favour of dealing with distributors and chain stores, as the demand for their games was so high.

The first three gaming offerings from games development new boys, DK'Tronics, were ready for release on the Spectrum. *Meteroids*, *Centipede* and *3D Tanx* were released with the latter the pick of the trio.

3D Tanx saw you in control of a gun turret of a tank with it trained on a bridge awaiting enemy tanks to cross. You would have to manoeuvre your turret and gauge the distance by raising and lowering it as you shelled the enemy tanks. It was a solid entertaining game that did cause a few muffled chuckles over the animation of the turret (see below). It rose and fell, looking not too dissimilar to a certain male appendage. Yep, it looked like a todger.

One of the biggest software houses of the time, Quicksilva, released its latest offering, *4D Timegate*. Although the premise of space battles with hoards of furious aliens was nothing new, the 3D graphics worked surprisingly well. Quicksilva were gaining a reputation of consistently producing great games and *Timegate* was no different.

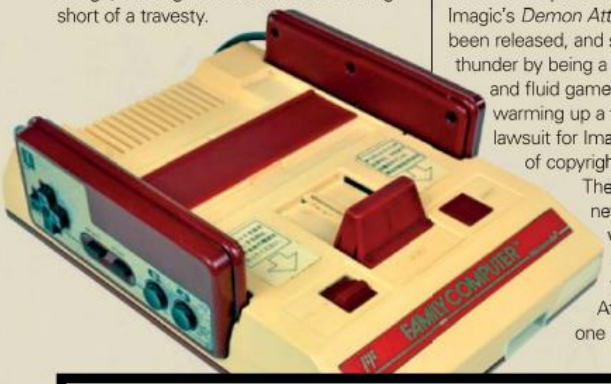


»[Spectrum] Tanks shot their loads over the oncoming enemy – that was 3D Tanx.

SPECTRUM	ATARI 2600	MUSIC
1 The Hobbit (Melbourne House)	1 Pac-Man (Atari)	1 You Can't Hurry Love (Phil Collins)
2 Penetrator (Melbourne House)	2 Defender (Atari)	2 Down Under (Men At Work)
3 Black Crystal (Carnell Software)	3 Starmaster (Activision)	3 Save Your Love (Renee & Renato)
4 Hungry Horace (Sinclair/Psion)	4 Frogger (Parker Brothers)	4 A Winter's Tale (David Essex)
5 Spectral Invaders (Bug-Byte)	5 Pitfall (Activision)	5 Electric Avenue (Eddy Grant)

More simplistic than *Timegate*, but just as entertaining, was Melbourne House's second *Horace* game. The iconic blue blob of a character decided that skiing and crossing a dangerous road in the style of *Frogger* would be the way to go, and so *Horace Goes Skiing* was born. It soon became a firm favourite on the Spectrum. A Commodore 64 version was later released, but failed to impress.

Two imminent arrivals on the Atari 2600 console were the eagerly awaited follow-up to Atari's version of *Pac-Man* and their take on the arcade game *Phoenix*. Everyone was hoping that many wrongs would be righted with *Ms Pac-Man*, after the first game was so disappointing. With its flickery graphics and uninspired maze design, the original *Pac-Man* was nothing short of a travesty.



Thankfully it appeared that Atari had taken on board the criticism levelled at *Pac-Man*, and the resulting sequel bore more of a resemblance to the arcade game we knew and loved, and it played much better, too. Having different maze designs for each level compared favourably with the arcade version, but it was the small attention to detail that made it feel like a real *Pac-Man* game. The inclusion of the floating fruit bonus was good to see, and being able to actually face up or down if you were going that way (instead of always facing left or right regardless of your movement, as you did in *Pac-Man*) was a great addition.

Phoenix was also released, and thankfully was a competent conversion of the coin-op. Unfortunately for Atari, Imagic's *Demon Attack* had also recently been released, and stole most of Phoenix's thunder by being a much more playable and fluid game. Still, Atari were warming up a freshly squeezed lawsuit for Imagic for breach of copyright.

There was more good news for Atari owners with the introduction of a new magazine with news about all Atari machines. Issue one of Page 6 was created after Les Ellingham was appointed newsletter editor for the regional Atari Birmingham User Group. Realising that there was opportunity to create something a bit more substantial than a localised newsletter, Les and his wife Sandy created the first issue of Page 6.

At 20 pages, including covers, it was small but filled a niche market perfectly. It kept growing and in 1987 Issue 29 weighed in at 84 pages, and finally became available to buy at newsagents. Despite Page 6's successful progression from newsletter to glossy magazine, it remained faithful to its core readership: the Atari enthusiast. Page 6's final issue was Issue 89, published in the autumn of 1998. A great innings for a great magazine.

»[Atari 2600] Like a phoenix rising from the ashes of an overly expensive arcade conversion licensing deal came, er, Phoenix.

JANUARY 1983 NEWS

On 17 January, breakfast television arrived in the UK. The BBC launched first, introducing us to the ingeniously titled *Breakfast Time* fronted by Frank Bough and Selina Scott. Popular lifestyle segments were hosted by personalities such as astrologer Russell Grant. A regular morning exercise routine hosted by leotard-wearing Diana Moran earned her the nickname of Green Goddess.

»Viewing figures pre-Roland Rat = 100,000. Post-Roland Rat = 1.8 million. Yeah! Rat fans!

Two weeks later ITV countered with their own breakfast show TV-am's *Good Morning Britain*. It struggled initially but soon began to catch up in the ratings war. This was in no small part to its newest presenter, a puppet called Roland Rat.

31 January saw a new law that made it compulsory for all British drivers and front seat passengers to use seatbelts, which used the "Clunk click, every trip" campaign, fronted by Jimmy Saville.

And on 23 January we saw the television debut of a new action series featuring a group of four ex-commandoes, sent to prison by a military court for a crime they didn't commit. They promptly escaped from a maximum security stockade to the Los Angeles underground. Today, still wanted by the government, they survive as soldiers of fortune. If you have a problem, if no one else can help, and if you can find them, maybe you can hire... The A-Team. The show became a worldwide hit. It ran for 98 episodes and five series, and spawned several novels, comic books, and a movie.

THIS MONTH IN...

POPULAR COMPUTING WEEKLY

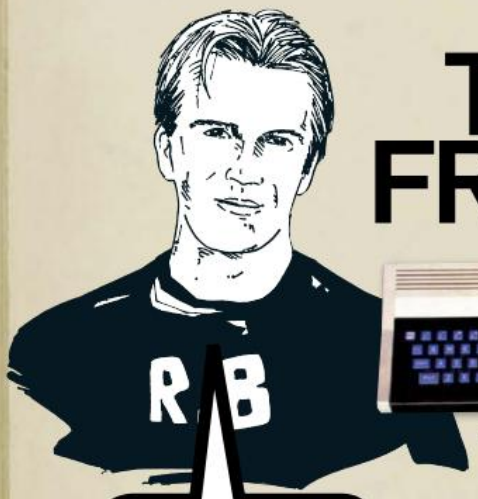
PCW spoke to John Hollis at Quicksilva about games programming and design. "I have a sneaking suspicion that some games designers may not even have a computer," said John.

ATARI CLUB MAGAZIN

The first issue of the German publication featured a colourful article on the history of Atari with rare pictures of a range of the earliest Atari coin-op machines, such as *Space Race*, *Starship 1*, and *Quadrapong*.

ELECTRONIC GAMES

The pick of the US magazine's many category winners were Videogame Of The Year went to *Demon Attack* (Imagic, Atari 2600), Best Action Coin-Op Game was *Robotron* (Williams) and Best Arcade Conversion was *Frogger* (Parker Brothers, Atari 2600).



THE LATEST NEWS FROM FEBRUARY 1983

February 1983: a time when new home computers were released almost on a daily basis, new games were produced by one person in their bedroom, and existing systems started to infiltrate the shelves of high street stores. Oh, and Kajagoogoo topped the charts. Sadly.

» This is the Age of Aquarius. Well, we're not convinced, we don't believe in horoscopes and astrology.

Mattel announced it would be entering the home computing market later in the year with its new system, the Aquarius. The machine, with its 4K RAM Z80 processor and slightly strange keyboard, promised nothing new to the plethora of existing systems, although Mattel did indicate that an impressive array of new add-ons and expansion packs would be available. Games would be on cassette or cartridge format, and the whole system would sell for a planned price of £139.

Future Aquarian delights to look forward to included a disc drive and a modem, which Mattel had the predictive foresight to reveal it could use for planned network services. Downloading games in 1983? Would Mattel's computer herald the new Age of Aquarius or would it have been better sticking to its game console, the Intellivision? Time would tell…

If the Aquarius was to succeed, it would have to take on the ever-increasing might of Sinclair Research. This month it revealed that it had sold over 200,000 Spectrum machines since launch. This is quite impressive when you consider that the first six months of that time was solely mail-order sales and that it was having considerable trouble keeping up with the orders with massive backlogs occurring.

» The Oric 1 found itself on shop shelves for the first time during February 1983. It was still there February 1989.

Sinclair forecast future sales of the Spectrum to hit 15,000 machines per week within the next few months. This prediction was, in no small part, helped by the news that most large branches of W H Smith would start stocking the machine from the beginning of February. It had been on sale in selected smaller stores, but because sales had been so overwhelming expansion was necessary. Smiths would also continue stocking the ZX81 as demand had continued unabated for the machine, and the firm also expanded its Sinclair software range to over 40 titles. Yes, 40 whole titles…

Oric International decided to follow Sinclair's lead into high street shops by agreeing to sell its Oric 1 machine in retail outlets, with W H Smith, again, being the principal stockist. Furthermore, it decided to completely cease selling via mail order.

While Sinclair seemingly soaked up every new user to the home computing market with its Spectrum, a few other companies were planning an assault on the Sinclair's territory. Texas Instruments announced it was set to release the TI99/2 within the next couple of months. The machine, which had more in common with the ZX81 than a Spectrum, looked to be woefully under-strength compared to new machines being released during this period. It had just 4KB RAM, no colour or sound and all for around £80? Seen as a backward step, the machine was essentially a stripped down version of the TI99/4A for computing newcomers, and although targeting beginners with an eye for a very basic starter machine, the ZX81 and Jupiter Ace both looked to be significantly better options.

Meanwhile, another big American company was trying to muscle in on the UK market with price reductions to its existing systems. Atari was set to reduce the price of its Atari 400 computer, bringing it down to a reasonable £160. Its bigger sister, the Atari 800, would remain with the heftier price tag of just under £400 although the RAM would be improved to 48KB from a rather mediocre 16KB.

Not to be left out, Sord, the Japanese computer manufacturer announced that its new machine, the Sord M5, was expected to hit British shores within the next few months. The Sord ran on a Zilog Z80 processor, had 20KB RAM and an 8KB ROM, which could be bumped up when the BASIC language cartridge was plugged in. It also had reasonable sound capabilities and a 16-colour palette, leading to expectations that it may be yet another challenger to Sinclair. CGL marketed the machine in the UK, but, when it finally arrived, it made very little impact on the already blossoming computing scene.

Still, the new systems kept coming with the news that Acorn Computers was ready to reveal its new micro, the Electron. It featured a very good keyboard backed up with a reasonable 32KB of memory. The machine was to launch with a proposed price tag of £199.

Being a trimmed-down version of the BBC Model B, the Electron would only be semi-compatible with the BBC micro's existing software. Marketed as a direct competitor to the Spectrum, it was interesting to see how the Electron

» The Sord M5, the first Japanese computer to be released and not bought by thousands of computing fans.

» The Acorn Electron was set in a case the colour of butterscotch Angel Delight. Didn't taste as nice though…

» *Horace Goes Skiing*, a game of two halves – one tarmacy, one snowy.

fared against a machine with an already substantial user base and enormous software selection.

Psion, which produced many titles for Sinclair's own branded software range, released a second game in association with Melbourne House, the magnificent *Horace Goes Skiing* for 16K and 48K Spectrums. The game itself was simple: cross the busy road to the ski-hire shop (*Frogger* style), buy your skis and get back across the road for a spot of the Franz Klammers on the downhill skiing section. Horace also made appearances on other machines such as the Commodore 64 and Dragon 32.

Psion, another company busy producing Sinclair branded software, had several new releases this month including *Flight Simulation* for the Spectrum and *Thro' The Wall* and *Super Glooper*, both for the ZX81.

Automata, creator of the Pi Man, announced a competition with a prize to blow the undercarriage right out of your trousers. The company's new game, *My Name Is Uncle Groucho, You Win A Fat Cigar*, found you attempting to uncover the identity of a mystery personality hidden away in this graphic puzzler. The game would be released on the Spectrum, the title, thankfully, shortened to just *Groucho*. However, the main lure of the game was the reward...

» Psion's flight simulation game, cunningly called *Flight Simulation*, was a massive hit back in 1983. A 'runway' success perhaps?

» **Left:** Psion's new release for the ZX81 was a bat-and-ball game, pretty much old hat even by 1983 standards.

» **Below:** *Pac-Man* again but with a hint of ZX81-ness. A great little game that also had a version of *Frogger* on side B.

The first person to find the identity of the star would win a prize. They would fly by Concorde to New York, before been flown to a luxury hotel in Hollywood to meet the mystery star. They would then return to New York to stay in the Waldorf Astoria hotel before cruising home on the QE2. Oh, and there was £500 in cash to fritter away, too. Certainly better than an Automata t-shirt and Mel Croucher stick-on tache, we think you'll agree… And the identity of the mysterious star? Mickey Mouse.

Atari and Activision had a coming together when the mailing list for Atari's VCS Club magazine somehow found its way into the hands of Activision, producer of some very accomplished VCS cartridge games.

» Massive first prize, not very good game. Find the mystery star and win. Needless to say, it wasn't Toby Anstis…

THIS MONTH IN...

CRASH ZZAP! 64 ACE

C&VG

The early days of C&VG saw a magazine stuffed with type-in games listings and ads. This month was no different with the bonus of a free 48-page games listing booklet. The adverts were the best bit and make for great retro reading.

Personal Computing Today

The Sord M5 was the hardware review this month with a sneak preview of the machine before it launched later in the year. The Japanese computing invasion was coming apparently. Next up… MSX.

Sinclair User

With a geeky looking fellow adorned with *Space Invaders* knitwear, the cheesy cover related to the 'Home Arcades – a new craze' feature inside. It focused on the early *Space Invader* clones available from software houses such as Quicksilva, Mikro-Gen and Bug-Byte.

CHARTS

FEBRUARY 1983

ZX81

1. Mazogs (Bug Byte)
2. The Black Crystal (Carnell Software)
3. 3D Defender (J K Greye)
4. Winged Avenger (Workforce)
5. Football Manager (Addictive Games)

SPECTRUM

1. The Hobbit (Melbourne House)
2. Penetrator (Melbourne House)
3. Arcadia (Imagine)
4. Football Manager (Addictive Games)
5. Timegate (Quicksilva)

VIC 20

1. Gorf (Commodore)
2. Grid Runner (Llamasoft)
3. Traxx (Llamasoft)
4. Scramble (Rabbit Software)
5. Frog (Interceptor Software)

MUSIC SINGLES CHART DEC '86

1. Too Shy (Kajagoogoo)
2. Down Under (Men At Work)
3. Sign Of The Times (Belle Stars)
4. Change (Tears For Fears)
5. Up Where We Belong (Joe Cocker & Jennifer Warnes)

» The front cover of Activision's Fun Club magazine – free to all Atari Club members via a bit of covert mailing-list shenanigans.

Activision also ran its own club and published its own magazine that, predictably, made its way through the letterbox of every Atari VCS Club member. Still, always nice to get something for nothing, and a spot of free advertising, albeit attained in a slightly cloak-and-dagger way, no doubt did wonders for Activision cartridge sales. Ethical? Nope. Pitfall? Yes please.

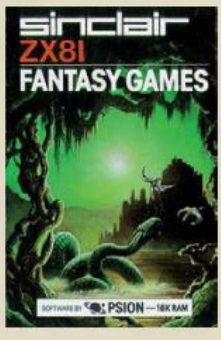
Flicking through the magazines of the day, Computer & Video Games, already up to issue 16, in those early computing times, hadn't yet introduced the Game Of The Month awards. In fact, there was a distinct lack of software reviews, with just a sprinkling of titles to occupy the readers' gaming curiosity.

Those featured, and achieving above average scores, were *Fantasy Games*, *Perilous Swamp & Sorcerer's Island* (Psion, ZX81), *Baja Buggies* (Gamestar, Atari 400/800) and a swathe of *Pac-Man* clones for Spectrum, *Spookyman* (Abbex), *Mazeman* (Abersoft) and *Gulpman* (Campbell Systems).

However, *Spookyman* fared the worst of the *Pac-Man* trio, which was rather surprising considering it was one of the first commercial games written by a certain Mr David M Webb, who later went on to program *Starion* for Melbourne House.

Melbourne House also announced that its new adventure game, *The Hobbit*, was ready for release under Sinclair's own software banner. Touted as one of the most complex Spectrum games ever released, expectation was high and it certainly didn't disappoint. It grabbed everyone's attention, shooting to number one in the Spectrum software chart. Not bad for a graphic adventure.

» Like little, green upside-down faces speeding through the sand, Gamestar's *Baja Buggies* was a great little racer for the Atari.



» One half of the Fantasy Games compilation, *Sorcerer's Island* was a worthy addition to your ZX81 games collection.

NEWS

FEBRUARY 1983

On the evening of 8 February, Shergar, one of the nation's favourite racehorses, was kidnapped from his stables in County Kildare. Shergar, being a prize stallion, was in readiness for the forthcoming breeding season, due to begin just one week on. An initial ransom of £2 million was demanded but was dropped significantly as the days went by. Shareholders in Shergar refused to pay any ransom, believing it would encourage further kidnappings. Shergar was never found, and the kidnapper's identity remains a mystery, although the IRA was widely believed to be responsible.

» Shergar, the ultimate racehorse, looks in fine fettle after a day of grooming with the Fisher Price Horsey Set.

Singer, Karen Carpenter died on 4 February due to a heart attack brought on from the strains of battling eating disorder anorexia. She was 32.

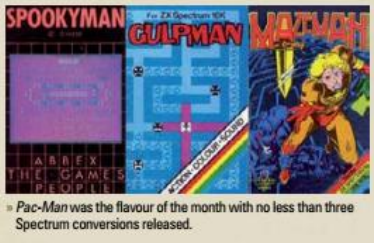
10 February saw a huge police investigation launched after a blockage in a drain, outside a house in Muswell Hill, London, was identified as human flesh. Police searched the house and found two human heads inside the property. The owner, civil servant Dennis Nielsen, was charged with the murder of homeless man Stephen Sinclair whose remains were identified as those in the drain. Searches of the nearby area found additional remains and Nielsen later admitted to a further 15 murders although he was eventually tried and found guilty on 12 charges of murder. He received six life sentences.

» Karen Carpenter looks like she is trying to Call Occupants of Interplanetary Craft.

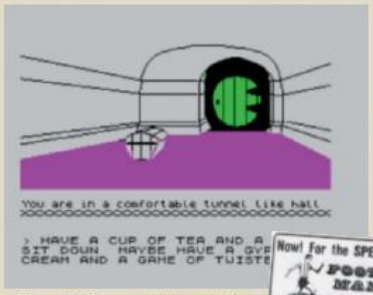
The game had been originally conceived and developed on the Tandy TRS-80.

Another freshly squeezed classic for the Sinclair Spectrum, released by Addictive Games by Kevin Toms was *Football Manager*. The game had already been on the market some months in the form of the ZX80/81 and TRS-80 versions. The ZX version had sold particularly well, so the progression to the Spectrum was a natural one. The most interesting addition to this version was the "3D" graphics that featured small UDG stick-men players and a goal the size of a power station in the match highlights. However, it did add to the game immensely.

Strangely, for a while several people insisted you could control the players with the keyboard, not believing the highlights were randomly generated through your team selections. No, instead the instructions were supposedly incomplete… 'Come on, Keegan, shoot man, shoot!' I bloody pressed the kick key and he spooned it past that (75-foot high) goal…

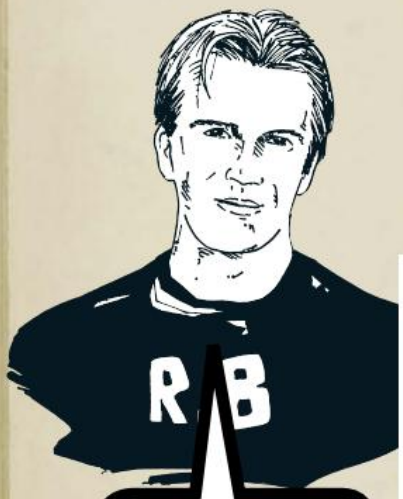


» *Pac-Man* was the flavour of the month with no less than three Spectrum conversions released.



» **Above:** A familiar screen to thousands of *Hobbit*-owning (that's the game not the creature) fans. Open chest. Empty. Pah!

» **Below and right:** An all-time classic is born. Prepare yourselves for the face of beardiness and umpteen format releases in the coming months.



Dodgy power packs from Sinclair, dodgier computers from Texet, Micronet 800 is launched, two new computer magazines launch, the CTA are formed, Clive Sinclair is officially a young man and Psion sell a million. Richard Burton pokes around March 1983…

THE LATEST NEWS FROM MARCH 1983

To all owners of Sinclair ZX Spectrum computers

URGENT

If you bought, or received as a replacement, a Sinclair ZX Spectrum computer since 1 January 1983, check your power supply (mains adaptor) now.

We believe that a batch of adaptors from one of our suppliers is faulty, and in certain circumstances might conceivably prove dangerous.

So… if, *and only if*, the lead between your power supply and your computer is black *and white* and you received it since January 1st:

1. Switch off at the mains, disconnect your system, and take off the plug.

2. Pack your power supply and post it to us at the address below *with your name and address enclosed*. Please do *not* return your computer, which is perfectly safe.

3. We will replace the power supply as soon as possible.

Please accept our apologies in advance for any inconvenience.

Send your power supply to:
Sinclair Research Ltd, Unit F, Broad Lane, Cottenham, Cambs., CB4 4SW.

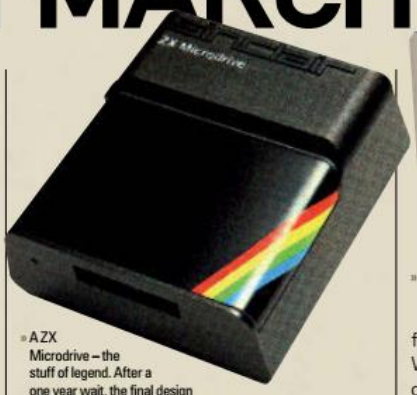
sinclair

» If your Spectrum power pack was going nuclear under the table whilst playing *Stonkers*, you might want to take note…

The last thing Sinclair needed on top of concerns for the growing backlog of unfulfilled mail order requests and the non-existence of its microdrive, were safety problems with its hardware. Unfortunately, that's just what it had with news that a batch of power packs would have to be recalled because of a wiring fault making them, potentially, dangerous.

With the power packs already loose in the gaming wilderness, Sinclair liberally splashed adverts around various computing periodicals explaining the situation and asking for the offending hardware to be returned as it "might conceivably prove dangerous". Using the power supply as an under-desk foot warmer was not one of these risks.

The ongoing saga of Sinclair's microdrive, the tape-spooled, cartridge-based storage system, came a little closer to conclusion with news that the final design had been confirmed and components were being ordered. The microdrive concept was revealed not long after the Spectrum was released, in April 1982, and had suffered setbacks ever since. Although the new microdrive would require rigorous testing before full manufacture could go ahead, it would still be a few months before the microdrives would actually be available to buy. Initially, they would only be available for those who pre-ordered and originally bought a Spectrum through mail order in the first few months of release. Once that had been sorted out it would be released through the usual retail outlets though, being readily available on the high street.



» A ZX Microdrive – the stuff of legend. After a one year wait, the final design and release date was almost upon us.

Another new system standing by to invade the burgeoning home computing market was the Texet TX-8000. The Texet machine cost £98, making it the cheapest colour computer available at that time. It was, shock horror, marketed as another direct challenger to the Spectrum's throne and featured several Spectrum traits including a rubbery keyboard and a Z80 processor.

Texet, the UK company distributing the Hong Kong-made machine, confirmed its plans to retail the TX-8000 from the beginning of April. Would it sell? Well, have you ever seen one? There you go then…

» It's new, it's cheap and it's never been seen since – The Texet TX-8000. Stick to making calculators chaps…

» The Lynx had previously only been sold by mail order. Good system, no software.

Yet another new computer elbowing its way into the marketplace was the Lynx by Camputers. Although the machine had already being available through mail order, major high street stores had started expressing an interest in stocking the machine. This was a good job really, as up to the end of February 1983, just 2000 machines had been sold.

With the introduction of so many new machines, there were always going to be casualties as superseded systems made way for the new brigade. The latest machine destined for a life of dust collecting in warehouses and attics countrywide was the 16K Oric-1.

With Oric International selling the 48K version in retail outlets such as WH Smith, who had ordered 12,000 units, the 16K version was restricted to mail-order sales only. In fact, there were so few 16K systems being manufactured that many customers purchasing through mail order were receiving 48K versions instead. WH Smith was once again leading the

» Hey, hey, 16K, what does that get you today? Nothing. Production of the 16K Oric-1 was slowly being phased out.

» Three of Bug Byte's titles for the BBC Micro. None of these were exceptional, but they were worth a play.

way with computer sales by expanding its range yet further with promises of more software and a wider range of systems for the forthcoming months. Amongst the new arrivals to the shelves of Smith's would be the Commodore 64 and the introduction of BBC software to its current stock.

Micronet 800, the new Prestel based database, was launched. The service would allow home computer users access to 30,000 pages of news and information, free downloads and the use of several new facilities including bulletin boards and Mailbox, an electronic mail program allowing you to send messages to other users on the network. A subscription would cost approximately £50 a year plus phone call costs and, of course, a spanky new modem such as the Prism VTX500, running at blistering speeds of up to 300 baud. Failing that, a crusty old acoustic coupler or two baked bean tins and some string would do.

Even in these pioneering early days of gaming and home computing, the question of software piracy and possible solutions to stamp it out were a hot topic for discussion. Whether little Jimmy was copying the latest Jupiter Ace game in the playground or a programmer was ripping off the graphics from an existing commercial game, there was a requirement for an Association to be formed… and so it was.

The newly-founded Computer Trade Association (CTA) held its first meeting this month, with Atari, Bug Byte and Lothlorien amongst its membership. One of the main concerns for the CTA was the growing prevalence of lending libraries that were springing up in the back pages of computer magazines.

This was further highlighted when a store in London offered a "buy and try" programme where purchasers of games could take them back within six months, for whatever reason, for an 80% refund. Although not condoning software piracy, it's not hard to see what the business plan was for the company. Bug Byte and Quicksilva, amongst others, expressed dismay and forehead vein-popping anger towards the scheme. A battle had seemingly begun…

The Guardian newspaper heaped praise onto Clive Sinclair by awarding the balding, bearded, computer guru their Young Businessman of the Year award. Not a bad effort from the slap-headed youngster, who at the youthful age of 42, can now concentrate on investing more of his pocket money into other ventures.

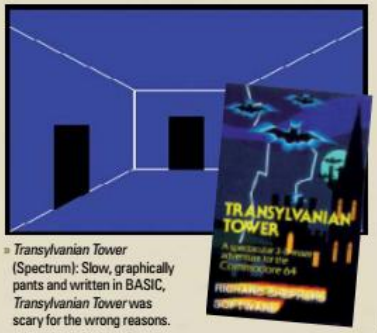
» Clive Sinclair, 42 and Young Businessman of the Year, looked like an old man even when he was young.

More Sinclair related success, this time for Psion, the software house that supplies titles to the Sinclair Research software label. The company reported that it had sold its millionth cassette covering both ZX81 and Spectrum formats. Responsible for many of the Spectrum's early titles such as *Hungry Horace* and the *Horizons* introductory cassette, the company announced an annual turnover of £5 million.

The Hairy One, Jeff Minter, announced a deal with Salamander Software to convert several of the Llamasoft VIC 20 back catalogue. The first game under conversion was *Grid Runner*, which would appear on the Spectrum, BBC and Dragon 32. Groovy.

Quicksilva revealed it had done a deal with Pixel Productions to market its games across the ZX81, Spectrum and VIC 20 formats including titles such as *Subspace Striker*, *Harvester* and *The Trader Trilogy*.

Richard Shepherd Software revealed that its new game, *Transylvanian Tower*, was ready for release and would be on sale by the end of March. As with the majority of RSS games, *Transylvanian Tower* was written in BASIC and although receiving some praise from the computing press, the game played slower than a very tired snail on a strong course of



» *Transylvanian Tower* (Spectrum): Slow, graphically pants and written in BASIC, *Transylvanian Tower* was scary for the wrong reasons.

WHAT THE MAGAZINES WERE SAYING...

Home Computing Weekly

Only their first issue and already they had an interesting early interview with the fledgling software house, Imagine, who were steadily building a reputation and a goodly sized fortune.

BBC Micro User

The first issue saw their first "Game of the Month", *Deathwatch*, which was a type-in. However, the game didn't look that shabby despite its origins. Other articles included "Build Your Own Games Paddle" and upgrading your BBC Micro A to a BBC Micro B. Nice.

Sinclair User

Sinclair User featured an article on the new wave of Sinclair-branded software, which, up to that point, had been disappointing. With new titles like *The Hobbit*, *Vu-3D* and *Inca Curse*, this was apparently enough to satisfy the reviewer, but really *The Hobbit* was the only quality title.

CHARTS

MARCH 1983

BBC

1. Arcadians (Acornsoft)
2. Planetoids (Acornsoft)
3. Colossal Adventure (Level 9)
4. Chess (Program Power)
5. Rocket Raid (Acornsoft)

SPECTRUM

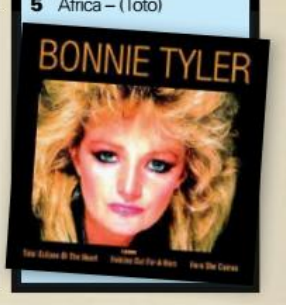
1. Time Gate (Quicksilva)
2. Arcadia (Imagine)
3. Penetrator (Melbourne House)
4. Scramble (Mikro-Gen)
5. 3d Tanx (dk'Tronics)

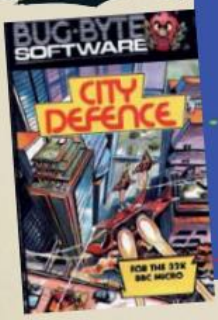
VIC 20

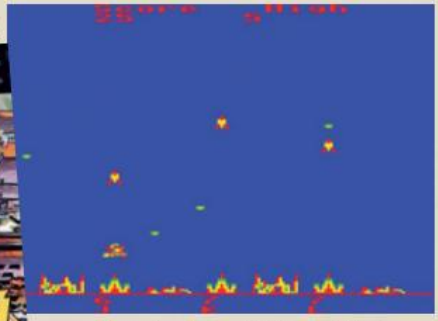
1. Grid Runner (Llamasoft)
2. Krazy Kong (Interceptor Micros)
3. Arcadia (Imagine)
4. Quackers (Rabbit Software)
5. Laser Zone (Llamasoft)

MUSIC SINGLES CHART MARCH '83

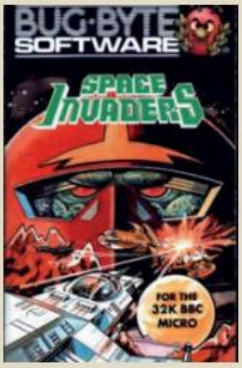
1. Total Eclipse Of The Heart – (Bonnie Tyler)
2. Sweet Dreams (Are Made Of This) – (The Eurythmics)
3. Billie Jean – (Michael Jackson)
4. Rock The Boat – (Forrest)
5. Africa – (Toto)



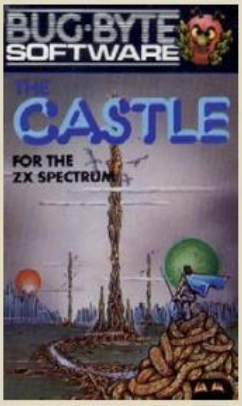




» **Above and right:** *City Defence* (BBC): This *Missile Command* variant from Bug Byte was not only a quick game but decidedly taxing.



» *Space Invaders* (BBC): Another new Bug Byte BBC release and as bog standard as they come. Nothing special and nothing new.



» *The Castle*, a text adventure converted from the Spectrum to the Oric – and Bug Byte's one and only Oric release.

Mogadon. It was initially available for the Spectrum with C64 and Dragon 32 versions not too far behind.

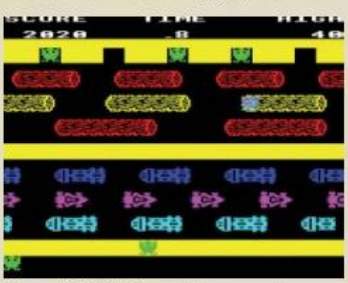
The Liverpool-based software house, Bug Byte, reported it was going from strength to strength with news they were selling a reported 30,000 units a month. It also revealed it was shutting down the mail-order side of the business as so many dealers and distributors were taking its products and orders by post had dropped by half.

It also announced its plans to move from its current premises, The Albany, to a larger building in central Liverpool, Mulberry House in Canning Place, sometime around the middle of the year.

On the software side of things, Bug Byte also had several titles ready for imminent release. *Space Invaders*, *City Defence*, *Music Synthesizer* and *Galaxy Wars* were to be released for the BBC Micro, whilst a conversion of Chris Cannon's Spectrum adventure game, *The Castle*, for the Oric-1, was also ready for release. For the Spectrum, it had *Spectres* , which was yet another *Pac-Man* clone. All Bug Byte really needed now was a block-busting platform game…

A new magazine was available for users of the BBC micro, the shrewdly titled, BBC Micro User. Featuring a mix of technical articles, gaming and type-ins, it was a welcome addition to existing reads of Acorn User and Paul Barbour's Laserbug.

Being the first issue, BBC Micro User took the chance to highlight a few of the better games that had been released over the previous few months, which included the likes of *Frogger* (A & F Software), *Space Pirates* (Bug Byte) and *Hyperdrive* (IJK).



» *Frogger* (BBC): A & F's *Frogger* clone was a good conversion. Getting past the traffic was nigh on impossible.

NEWS

MARCH 1983

A long time ago in a country far far away there was a President called Reagan who, on 23 March, announced to the world America's new Strategic Defence Initiative, later shortened to SDI and later dubbed by the media as Star Wars.

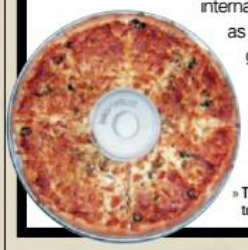
The aim of SDI was to install a defensive shield in space that would protect the USA from in-bound missiles by intercepting enemy warheads by destroying them with a particle beam.

SDI signified a new low between the US and Soviet Union and hastened another round of the Arms Race, although analysts believe the crippling financial pressure on the Soviets to keep up with this technology helped hasten the break-up of the USSR. The SDI project was finally shutdown in 1993.

Overall, it turned out to be quite a month for Ronald Reagan. 8 March saw him cause an international incident when he remarkably referred to the Soviet Union as an "evil empire". If nothing else, he kept the *Star Wars* theme going for a while longer.

After four years of development between Sony and Philips, the Compact Disc finally made its debut as a music medium in the USA on 2 March. CDs were already available in Asia as they had been introduced a few months previous.

» Apparently Mr Reagan instructed NASA to build a Death Star and an Imperial Shuttle too…

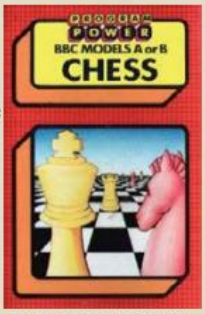


» The deep-pan triple cheese CD was one variant that never quite took off due to stereo jammage and excess cheese stringification.

» Monsters (BBC): Acornsoft's new release accounted for much time wasting during primary school maths lessons.

Another magazine making its debut this month was Home Computing Weekly. With a nice combination of games reviews, latest news, type-ins and the lighter side of hardware and programming, it was something of a breath of fresh air after years of technical driven magazines. HCW was ideal for the gaming technocabbage and new computer-owner alike.

Being a multi-format publication HCW covered a multitude of new software releases for a variety of formats. *Winged Avenger* (Workforce, Spectrum), *Monsters* (Acornsoft, BBC Micro), *Myriad* and *Skramble* (Rabbit Software, VIC-20) and *Chess* (Salamander Software, Dragon 32) all rated fairly highly. However, the one stand-out title was the latest release from Imagine, the fast and furious shoot-'em-up, *Arcadia*, released simultaneously on the Spectrum and VIC-20.



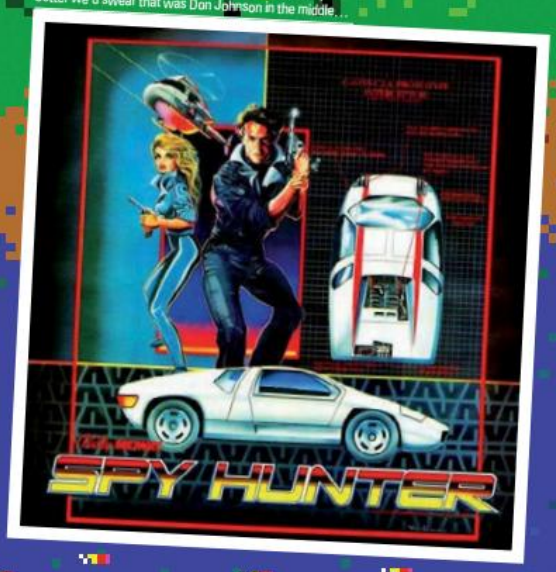
» You can probably imagine what *Chess* was like. It wasn't exactly inspiring stuff, but was a decent chess-sim nonetheless.

The March issue of Personal Computing Today also featured reviews for an all-embracing selection of micros. There was *Timegate* (Quicksilva) for the Spectrum, *Chess* (Program Power) for the BBC, *Buck Dodgers In The 25th Century* (The Software House) for the VIC 20 and Robot Nim (A& F Software) for the Acorn Atom.

» *Hyperdrive* (BBC): IJK's maze shooter game was a simple affair but very addictive.

» *Arcadia* (Spectrum): Colourful and relentless, *Arcadia* was a simplistic but superb game. The wobbly pins level was hard though…

THE MAKING OF...



» Spy Hunter's cabinet side art. If we didn't know any better we'd swear that was Don Johnson in the middle...

SPY HUNTER

Front-mounted machine guns, oil slicks, smoke screens, guided missiles and aquamarine go-faster stripes – Q would have been proud. Mike Bevan talks to ex-Bally/Midway graphic artist Brian Colin about the finest arcade 007 homage ever made

A never-ending highway scattered with homicidal enemy agents, unreliable bridges, VW Beetles and unfortunate bikers. Scored by the unmistakable jazz-like riff of the Peter Gunn theme, Spy Hunter was the epitome of cool Eighties arcade gaming. A thinly veiled tribute to all things shaken, not stirred, in overhead-view racing form, those lucky enough to encounter the sit-down version in particular will vouch for the sheer exhilaration it generated.

Starring a lone coupé, the G-6155 Interceptor, locked in a desperate struggle for survival with assassins sporting switch-blade hubcaps, shotgun-toting sedans and even bomb-flinging helicopters, the odds were stacked against you. And unlike the indestructible Bond, players were more vulnerable with their three fleeting lives granted once the game shifted into its highest gear.

"I wasn't around at the game's conception," admits Brian Colin, one of four artists working on the project, alongside lead programmer Tom Leon and arcade hardware designer George Gomez. "When I joined, the basic controls were already functional... a simple car was moving left and right, and up and down... but little else."

Tom and George were fans of the Bond movies. Tellingly, the game's original background music was a version of Monty Norman's famous spy theme. Of course, licensing issues later called for an alternative soundtrack. Luckily, there didn't appear to be any way for the Fleming camp to put the dampers on re-creating generic 007-style gadgets and vehicles, as long as the team did not blatantly copy *Goldfinger*'s Aston Martin DB5 or specific details of the films.

Still, presenting a cinematic car chase on Eighties arcade hardware was daunting. The technology for sprite-based 3D racers like *OutRun* and *Chase HQ* was still a few years off, so taking Tom's "simple car" and placing it on scrolling 2D tarmac seemed the best solution. *Spy Hunter* was Bally/Midway's first crack at a scrolling arcade game, a genre still in its infancy at the time. The majority of releases back then were of the single or flick-screen variety.

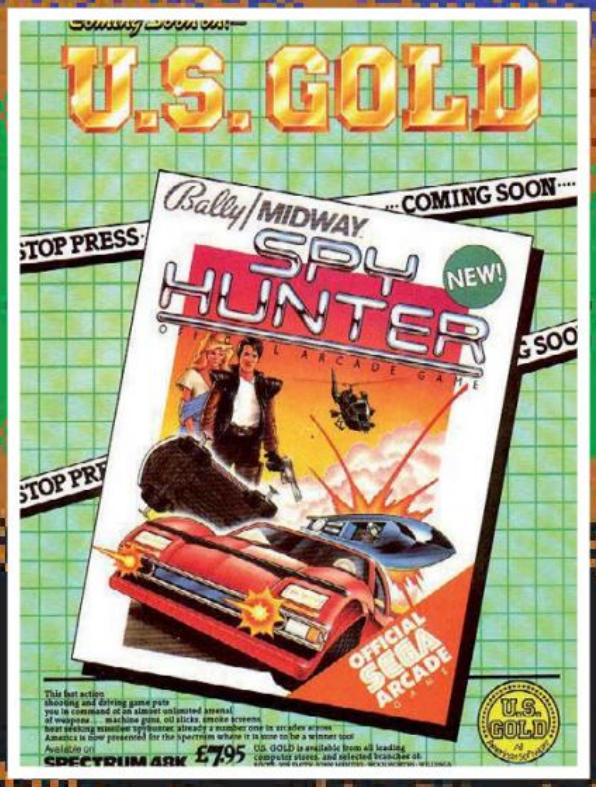
During development, the team only had one prototype system, so Tom used it to code by day, while Jeff Nauman, the second programmer, had access to it at night. Being a slightly rushed, ad-hoc system meant it wasn't perfect for the job by any means. "I was told it was actually hardware scrolling, but since it was basically a specially modified afterthought to the existing hardware, it wasn't particularly good scrolling hardware," explains Brian.

"This presented a set of unique challenges," he adds. "The 'background' was made up of lower-resolution, artificially elongated rectangles. Blending the hi-res foreground elements with the chunky background was a challenge, as was creating a slightly skewed top-down look for buildings, bridges and so on that managed to convey the necessary information in an interesting and aesthetically pleasing manner. As an artist who enjoys creating cartoony

IN THE KNOW

- **PUBLISHERS:** BALLY/MIDWAY
- **DEVELOPER:** IN-HOUSE
- **RELEASED:** 1983
- **CONVERSION PLATFORMS:** APPLE II, ATARI VCS, ATARI 8-BIT, BBC MICRO, C64, SPECTRUM, NES, GBA
- **GENRE:** DRIVE-'EM-UP
- **EXPECT TO PAY:** £400+ (UPRIGHT CABINET) £500+ (SIT-DOWN CABINET)
- **BY THE SAME DEVELOPER:** DISCS OF TRON (1983) (PICTURED) RAMPAGE (1986) XENOPHOBE (1987)

» Discs Of Tron



FENDER AVENGER

Some videogame titles are so perfect it's difficult to imagine anything else ever being considered, and *Spy Hunter* evokes the over-the-top Eighties action-movie heritage of its gameplay brilliantly. It could have been very different, though. A handwritten memo – the results of a group brainstorming session for the game's title – reveals a list of abandoned names including the spectacularly rubbish *Spymobile*, the rather more amusing *Startkey & Clutch*, *Lead Foot And Road Reamer*, and *Dukes Of Tron*, a sly nod to Bally's previous hit *Discs Of Tron*. And we'd imagine that anyone who's ever been caught in a tailback on the M25 might appreciate the sentiment of the proposed *Rush-Hour Avenger*. We also like the sound of *Drunk Tank* – any game involving inebriated heavy armour sounds like a pretty good idea to us...

"As an artist who enjoys creating cartoony characters, the realistic nature of the game meant I had to exercise restraint"

THE MAKING OF...
SPY HUNTER

» [Arcade] Despite the driving conditions, icy roads provide ample opportunity for oil-slick fun.

» [Arcade] Whoops… Sorry, mate, I didn't see you there.

characters [as seen in *Rampage*], the realistic nature of the game meant I had to exercise a bit more restraint."

"*Spy Hunter* was the ultimate evolution of the 'falling attacker' gameplay made popular in such games as *Space Invaders*, *Centipede*, and *Galaga*," Brian admits. It augments additional play tactics to the standard up-screen shooter, mixing in additional rear-firing weaponry in your smoke and oil attacks with the ability to collide with and aggressively smash enemy vehicles off the road.

"This part of the game was always intended to come straight out of the action movies that inspired it," says Brian. "Tom knew he needed to give players the ability to deal with side attacks in a way that required a bit of finesse. The tricky part was hitting other cars solidly with the side of your vehicle, but not so hard that you damaged your own car. Tom factored in speed variances, too, so you had to match the opponent's speed before slamming into them or you'd end up in a crumpled heap.

We also knew that the up-screen action had to be fairly easy to master, like shooting fish in a barrel, so we had to create an adversary [the bullet-proof Road Lord] that was immune to gunfire from behind and would need to be dealt with in an entirely different way. So once Tom created and refined the bumping motion of the player's vehicle, he added that ability to the AI vehicles as well."

Which brings us to the enemies. "These guys were always intended to be a part of the game," Brian reveals. "Certainly they were in the very first discussions… Tom's 'sideways bump' was devised so that players could defend against the tyre-slashing side-to-side attacks of these bad guys… so long as you avoided their nasty spinning knives."

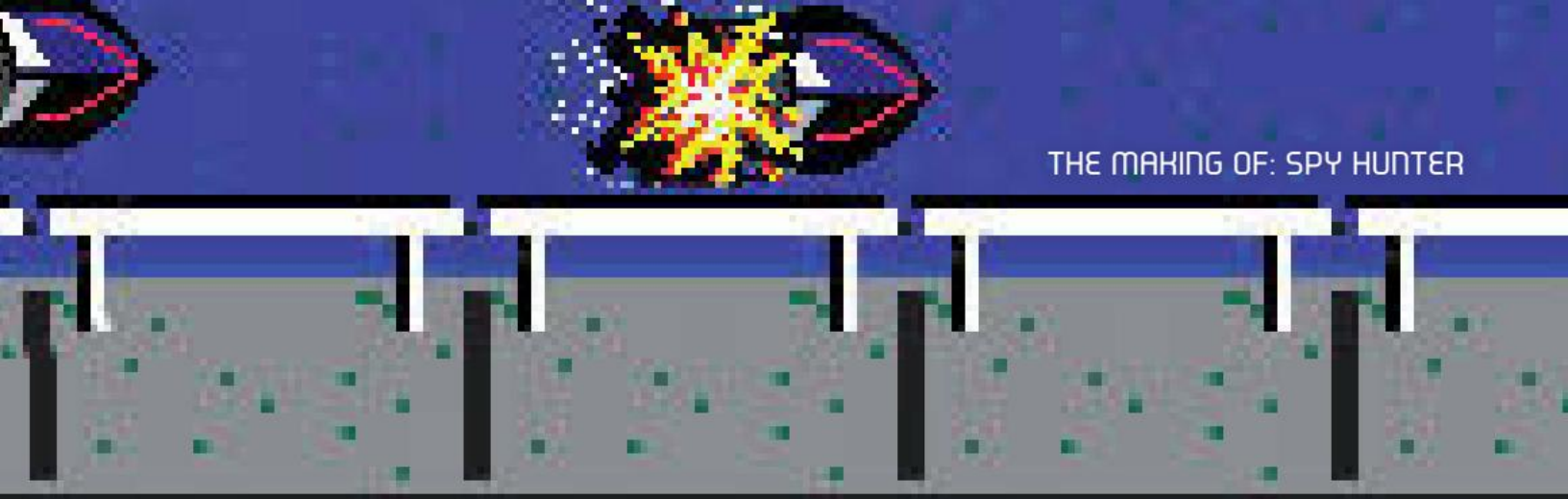
Despite the hit-and-run mayhem created by the Road Lord and his wheel-mashing cronies, civilians with family saloons, Beetle hatchbacks, and motorbikes often wander into your line of fire. Our operative must exercise caution to protect them, because shooting or bashing them off the road by 'mistake' plays havoc with the scoring. "You didn't actually lose points; you just stopped gaining additional points momentarily when an innocent was hit," says Brian. "It was important not to 'reward' indiscriminate vehicular homicide, regardless of how much fun it was."

The last of the trio of four-wheeled villains was created in order to address an in-game issue that had been bugging the team. "We had a problem," explains Brian. "After a crash, we couldn't really control where a player's vehicle might respawn, and we wanted to let him get up to speed before safely pulling back onto the road. So to be nice, we disabled initial off-road collisions after a new car was spawned. Players soon learned they could stay off-road indefinitely, effectively cheating the game. Rather than put off-road collisions back in, which would penalise the folks who didn't cheat, it was suggested that we create a vehicle that would slide up beside the cheaters and blow them away. Thus the Enforcer was born. He eventually made his way into normal gameplay as well."

Alongside those worthy adversaries and civilian bystanders, players can be thankful for one ally, another of the initial vehicles Brian remembers working on. In a move to give your machine-gun-toting sports car the upper hand later in the game, supplementary equipment in the form of smoke screens, oil slicks and missiles can be picked up via the Weapons Van. Performing the cinematic feat of negotiating a ramp at full tilt into its belly offers the added bonus of a brief respite from the high-speed carnage.

"There was a lot of tuning on this game element," recalls Brian. "It sounded simple, but positioning the Weapons Van in front of the player's vehicle was not easy. Tom had to… anticipate the player's movements. It always amazes me when I watch the car glide effortlessly into the van, knowing, as I do, the weeks of tweaking it took to get it just right."

Exploiting the Weapons Van is essential as failure will leave you at the mercy of *Spy Hunter*'s airborne hoodlum: the Mad Bomber helicopter. "We wanted to increase difficulty as the game went on, without simply throwing so many cars at the player that all hope was lost," says Brian. "By creating an adversary that couldn't be hurt without a particular weapon, we'd both reward them and



increase the pressure at the same time. The Mad Bomber wasn't that tough, but if you missed your chance to get the missiles, his grenades could be the final bit of mayhem that overwhelms you."

The final in-game twist comes in the form of the 'Bridge Out' notices that flash up on the highway, after which the road falters followed by a humiliating dip for any driver foolish enough to ignore the warning. The answer, as Bond fans will know, is to take a short cut through a nearby boathouse and transform from car to suitably equipped speedboat. Brian reveals that this memorable game feature was an afterthought. "Once the entire game was fully functional, we realised it would be fairly simple to re-create all the art and let our hero fight on water as well as on land," he explains. "Newly hired animator Steve Ulstad was responsible for most of the aquatic vehicles."

Brian reveals a number of other details about *Spy Hunter*'s creation. The roads and rivers were not randomly generated but painstakingly mapped out in advance. A 'real-time jazz generator' played the *Peter Gunn* theme with subtle variations in every game. The timed period at the start, which allows players infinite lives was to give first-time players the chance to "make mistakes" as it was felt the game was more involved than others at the time.

We ask if Brian agrees that George Gomez's famous sit-down cabinet was the best way to experience the game. "Absolutely the best way to play it," he exclaims. "And make no mistake, George's role went way beyond 'cabinet designer'. In those early days, George was in many ways the 'unofficial' creative team lead, and his unbridled enthusiasm and passion was contagious."

Brian's also happy to provide some background on *Spy Hunter II*, a dubious follow-up that ditched the top-down formula for an angled 3D perspective. "I'd just seen the Road Warrior and was looking for a vehicle – no pun intended – that would allow me to mess with post-apocalyptic images," he recalls. "From the first design meeting, it was obvious that a lot of compromises were necessary, and I suspected we didn't have any business attempting to do what we were doing on the system we had available. But sometimes, in the real world, it has to be about keeping the guys on the production lines busy, so you work with what you've got. I don't think any of us felt that it did justice to the original."

And what a game that original was. Which makes it surprising to learn the laid-back manner in which the team pieced it together. "*Spy Hunter* was unlike almost anything in development at the time," confesses Brian. "It wasn't on a schedule, it wasn't high priority. It was developed, literally, in a back room, which helped it stay below the radar. As a result, Tom could spend months and months tuning and tweaking the game. With the benefit of hindsight, we were simply a bunch of kids being allowed to play."

"George Gomez was the 'unofficial' creative team lead. His enthusiasm and passion was contagious"

HEROES & VILLIANS

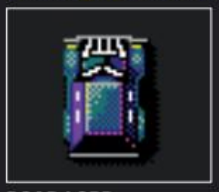
Get your motor running. Head out on the highway. Trash some spies

G-6155 INTERCEPTOR

INTERCEPTOR SPEEDBOAT

WEAPONS VAN

The bad guys, as noted in your spy-hunting handbook's appendices



ROAD LORD (150 POINTS)

SWITCH BLADE (150 POINTS)

THE ENFORCER (500 POINTS)

THE MAD BOMBER (700 POINTS)

BARREL DUMPER (150 POINTS)

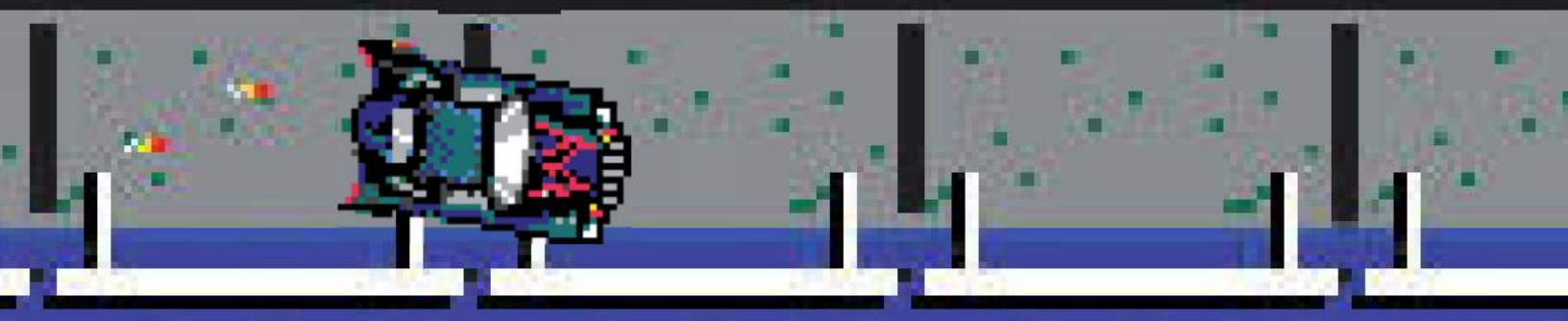
DOCTOR TORPEDO (500 POINTS)

Avoid the following vehicles, they're harmless civilians

HATCHBACK

MOTORCYCLE

SALOON



Sinclair passes a million, Gridrunner tops the pile, Atari gets miffed, Phoenix doesn't rise, Pac-Man gets 'board' and Hitler writes a book. Strap a Big Trak to each foot and give Stretch Armstrong a tug, we're off to April 1983. Richard Burton points the way

THE LATEST NEWS FROM APRIL 1983

Probably the fastest microcomputer in the universe

the JUPITER ACE only £89.95.

» The Jupiter Ace: the "fastest microcomputer in the universe." Feel the power of the 3K RAM. Top marks for trying though.

The ongoing case of games retailer Software Centre offering a "buy and try" scheme finally came to a conclusion. The shop had been running a scheme whereby any game purchased in the store could be returned within six months for an 80 per cent refund or discount off future purchases. After a spot of wrangling, legal jargon juggling and general one-upmanship, the buy-back period was reduced to a month. Although seen as a victory for the software producers, in reality it would have very little impact on the Software Centre's sales. Indeed, it announced expansion plans with news that it would be opening two new stores.

There was much chinking of champagne flutes at Sinclair Research as it released a statement declaring it was the first company to sell more than one million computers worldwide. It claimed that it had sold 130,000 ZX80s, 750,000 ZX81s and 200,000 Spectrum machines. Needless to say Commodore countered, claiming it had passed the million mark a few months previously.

If Sinclair felt compelled to include the Timex 1000, the US version of the ZX81 that it had licensed to Timex, in its final figure, it would have significantly bumped up the total. The Timex 1000 and the mighty Apple II both had total US sales of 600,000 units sold while the market leader, Commodore's Vic-20, had sold 750,000 units.

» *Phoenix* (Atari 2600): Atari proclaimed, "don't buy that; buy this." Thousands of gamers listened and carried on playing *Demon Attack*.

Software gripes, gnashing of teeth and sour grapes aplenty came from software giant Atari. It was attempting to place an injunction on Imagic, a game developer for the Atari 2600, for daring to release a piece of software that looked a bit like one of its own games. Strangely, at this point, Atari hadn't even commercially released its game. Needless to say it was less than enthusiastic about the roaring trade Imagic was doing with its game *Demon Attack*. The game was a massive hit on both sides of the Atlantic even claiming Game Of The Year in 1982.

The problem Atari had with the *Phoenix* clone was just that… it was a clone of *Phoenix*. Atari itself had recently acquired

» It looks like a ZX81, it tastes like a ZX81, it is a ZX81 – with a Timex badge and just a hint of cheeseburger.

» *Demon Attack* (Atari 2600): Atari loathed it, gamers loved it. The *Phoenix* clone that gave Atari the right hump.

the licence for *Phoenix* from Centuri to produce an official *Phoenix* game and, because of the hugely successful Imagic title, Atari was left filling its underpants and wondering whether there would be a market for its game by the time it eventually got released. Because of this, Atari wanted an injunction against Imagic to stop selling its game as, according to the Atari chairman, "With Atari's introduction of the authentic game, the presence of *Demon Attack* in the marketplace is confusing to the consumer."

Alternatively, it could also mean that it prematurely thought the *Phoenix* end of the market was sewn up with its new official game. That was until it was usurped by a cheaper and, ultimately, better game which had been released way ahead of its own effort while all that time eating into its potential profits. With a record-breaking (as well as company-breaking) fee having been paid for the dire *ET – Extra Terrestrial* licence, was it any wonder Atari was financially arguing the toss about every lost dollar…

Not content with refusing to let other developers release games it also wanted an injunction thrown at Mattel for developing the Atari Expansion Module for its Colecovision console. The Module would allow Atari 2600 to be played on the system, and you won't be surprised to hear that Atari started stomping its feet once again.

Llamasoft founder Jeff Minter had plenty of reasons to celebrate with the news that company had the top-selling Vic-20 game… in America. *Gridrunner*, a

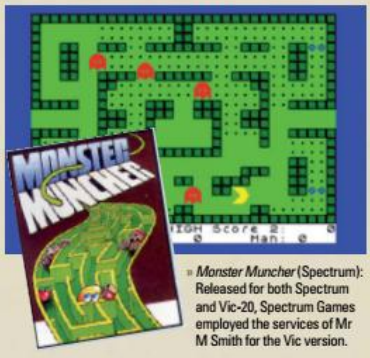
» The expansion module guaranteed to annoy the pants off computer gaming giants (particularly those with money problems).

cartridge-based game, had sold over 15,000 copies in just a few months. Minter also revealed that he was working on a follow-up to *Gridrunner* entitled *Matrix*, which he hoped would be ready to release some time in May. On top of that he also had two new Llamasoft titles ready for release in the same month, *Rox 64* and *Attack Of The Mutant Camels*, both for Commodore 64.

Adverts started appearing in the computing press offering the opportunity to buy what was being advertised as "probably the fastest microcomputer in the universe." High praise indeed but what exactly could this dream machine be? Was this super computer Big Blue or a two-stroke Spectrum complete with steam-powered processor?

Turns out it was neither. The machine capable of being the fastest in the entire known universe was the Jupiter Ace. Like a whoopee cushion going off at a funeral, the advert brought stifled sniggers and barely controllable bladder function from many in the computing world. £90 would buy you the ultimate technological experience, offered only via mail order.

Quicksilva had a sudden surge of videogaming releases this month with no less than 14 titles across a range of different systems. This sudden over-abundance of software was due to advertisements Quicksilva had been running for freelance programmers to send them their best efforts. They did, Quicksilva liked them, resulting in all 14 new titles being freelanced submissions rather than in-house productions.



» *Monster Muncher* (Spectrum): Released for both Spectrum and Vic-20, Spectrum Games employed the services of Mr M Smith for the Vic version.

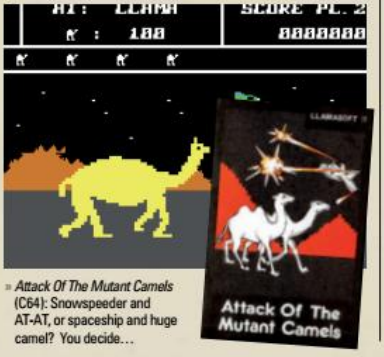
» *Ah Diddums* (Spectrum): The mean, lean, stuffed-with-foam killing machine takes on the toy box in Imagine's newest game.

Among the new games were *Astro Blaster* and *Frenzy* for the Spectrum; the BBC machines had *Wizard* and *Protector*; the ZX81 featured *Pioneer Trail* and *Ocean Trader*; and the Vic 20 had *SkyHawk*. Coincidentally, this month also saw *Velnor's Lair*, a game that would later be re-released by Quicksilva, become available through mail order from Neptune Computing. The creator, one Mr Derek Brewster, he of *Crash* adventure column fame, later went on to write *Codename Matt* for Micromega.

Imagine Software, which was riding high on the recent success of *Arcadia*, released its newest game, *Ah Diddums*, for the Spectrum. You take on the role of a pea-shooter-wielding teddy bear taking on a variety of nasty toys. The Liverpool-based company also released *Catcha Snatcha*, available for the Commodore Vic-20. Playing the part of a store detective, you have to clear floors of thieves, dogs and bomb threats while also attempting to gain popularity with your boss.

Spectrum Games, the producer of, er, Spectrum games began advertising its newest releases with *Monster Muncher*, available for both Spectrum and Vic-20, on the frontline of its advertising campaign. The game itself was simply another *Pac-Man* variant, although, rather oddly, Matthew Smith programmed the Vic-20 conversion. Yes, that one, the one that hardly ever gets a mention…

Spectrum Games only released a handful of games and, after some



» *Attack Of The Mutant Camels* (C64): Snowspeeder and AT-AT, or spaceship and huge camel? You decide…

WHAT THE MAGAZINES WERE SAYING...

C&VG

Issue 18 began with a cracking cover supplied by guest artist, JMW Turner, of *The Battle Of Trafalgar* and continued with the regular arcade round-up featuring a review of *Pole Position* and tips on how to play *Tron*. There was also a preview of the new *Pac-Man* pinball machine, *Tilt*.

BBC Micro User

It's only the second issue and *BBC User* already has a monkey playing with a Barbie doll on the front cover. Inside there's a detailed feature on creating graphics. Unfortunately they mostly look like the vortex explosion on old kids TV series *The Adventure Game*. Doogy Rev…

Sinclair User

Sinclair User featured an article on the new wave of Sinclair-branded software, which, up to that point, had been disappointing. With new titles like *The Hobbit*, *Vu-3D* and *Inca Curse*, this was apparently enough to satisfy the reviewer, but really *The Hobbit* was the only quality title.

CHARTS

APRIL 1983

BBC

1. Snapper (Acornsoft)
2. Planetoids (Acornsoft)
3. Rocket Raid (Acornsoft)
4. Chess (Program Power)
5. Creative Graphics (Acornsoft)

SPECTRUM

1. Penetrator (Melbourne House)
2. Galaxians (Artic)
3. Arcadia (Imagine)
4. Escape (New Generation Software)
5. Transylvanian Tower (Richard Shepherd)

DRAGON 32

1. Donkey King (Microdeal)
2. Dragon Trek (Salamander Software)
3. Attack (PSS)
4. Katerpillar Attack (Microdeal)
5. Planet Invasion (Microdeal)

MUSIC SINGLES CHART APRIL '83

1. Let's Dance (David Bowie)
2. Is There Something I Should Know (DuranDuran)
3. Church Of The Posion Mind (Culture Club)
4. Boxer Beat (Joboxers)
5. Breakaway (Tracey Ullman)

» **Above and right:** *Donkey King* (Dragon 32): A pretty faithful conversion of the classic game and it plays really well too.

» The most beautiful object in the world. Go and buy two now and keep one as a spare, just in case the other one breaks.

» *Ground Attack* (Spectrum): Silversoft's rendition of a classic formula. Not a bad game, not great, but not bad.

financial shenanigans, later liquidated and reformed almost instantly into the all-powerful Ocean Software company. That sort of thing would never happen in the publishing business.

If you want to play *Pac-Man*, *Zaxxon* and *Donkey Kong* but without all the hassle of having to actually own a computer, while also introducing the world of gaming to your musty-smelling elders, then Milton Bradley had something that was right up your boulevard. The three aforementioned games, along with *Defender*, *Berserk* and *Frogger*, had all been converted, by means of glue, string, and bits of old paper, into board games for 'all the family.'

MB Games also had something else, something a lot more exciting, up its board-gaming sleeves. Ready for release within the next month was a brand spanking new console featuring vector graphics and a very modern arcade-like styling with an in-built monitor and controller.

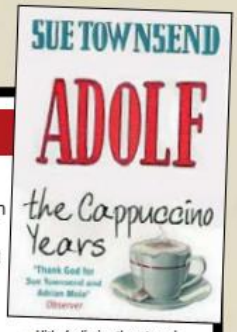
The Vectrex games system was standing by for its launch in the UK, and looked to be superb. The monitor was black and white with the illusion of colour being achieved by placing coloured plastic overlays, which came with each game, over the screen. MB Games hinted that the release price would be £139, games would be around £19.99 each and a free title, in the form of *Mine Storm*, would also come with the console.

The ever-expanding computer gaming magazine world, which was about to get even bigger with the next month's release of the new *Dragon User*

NEWS

APRIL 1983

Adolf Hitler hit the news for his literary escapades on 25 April when his diaries, supposedly hidden in a barn by an Eastern German officer after recovering them from a crashed plane, were published for the first time in a German magazine and UK newspaper *The Sunday Times*. Mr Hitler's own account of World War II was eagerly awaited with fortunes changing hands to publish the diaries. Unfortunately, a British historian evaluating the diaries, who was initially convinced by their authenticity, later announced he was unsure if they were genuine. Testing of the paper, glue and ink later showed the diaries were indeed fake…



» Hitler's diaries threatened to be a literary flop until Sue Townsend got hold of them.

Also available on eBay right now… Lord Lucan's tash…

7 April saw the first space walk from a space shuttle, the ill-fated Challenger. The sixth shuttle mission began on the fourth and ended five days later. The walk itself lasted for four hours and 17 minutes.

With the average life of a £1 note lasting only nine months, the much-used monetary unit was targeted for modernisation and transformation into something a little more hard-wearing. After many months of planning, 21 April saw the introduction of the first one pound coins into circulation in the UK. People loathed them…

» The folding stuff made way for the nickel/brass and zinc unfolding stuff.

» *Starship Command* (BBC): Smooth-playing space shooter from Acornsoft. Not much colour but great to play.

magazine, had a varied selection of new software titles on review for the eager beavers of gamesland.

Issue 18 of *Computer & Video Games* magazine featured reviews for *3D Tunnel* (New Generation Software, Spectrum), *Penetrator* (Melbourne House, Spectrum), *Starship Command* (Acornsoft, BBC) and *Galaxians* (Atari, Atari 400/800).

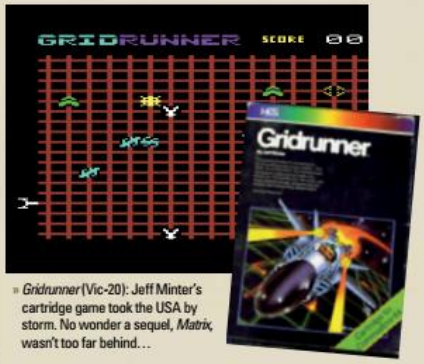
Personal Computing Today belatedly reviewed *Arcadia*, (Imagine, Vic-20), *The Hobbit* (Melbourne House, Spectrum), *Cyclon Attack* (Acorn Atom, A'n'F Software) and *Skramble* (Rabbit Software, Vic-20), most of which had been reviewed by other magazines a couple of months before.

Home Computing Weekly included reviews for *Print Shop* (CCS, Spectrum), *Monster Mine* (Gem Software, Dragon 32), *Donkey King* (Microdeal, Dragon 32), *Tobor* (Elfin Software, Spectrum), *Ground Attack* (Silversoft, Spectrum), *Pimania* (Automata, Dragon 32), *Jackpot* (Computer Rentals, Spectrum), *Rox 64* (Llamasoft, Commodore 64) and *Gridrunner* (Llamasoft, Commodore 64).

Another weekly magazine called *Personal Computer News*, had a diverse selection box of games on review. *Lunar Leeper* (Sierra Vision, Apple II), *The Dark Crystal* (Apple II, Sierra-Online), *Up, Up Away* (Atari 400/800, Pulsar Software), *Great Britain Limited* (Simon Wessel Software, Spectrum) and *Wizard War* (Salamander Software, Dragon 32) were all given a thorough examination.

» Great Britain Limited (Spectrum): Manage the country in *Football Manager* style. Cheaper taxes, booze down and *RG* under a quid. Nice.

And finally, the longest running Sinclair-based magazine, *Sinclair User*, ran its rule over a whole swarm of new Speccy titles including *Roman Empire* (Lothlorien), *High Noon*, *Base Invaders* and *Do Not Pass Go* (all from Work Force), *Masterchess* (Mikro-Gen) and *Frogger* (DJL Software) for the ZX81.



» *Gridrunner* (Vic-20): Jeff Minter's cartridge game took the USA by storm. No wonder a sequel, *Matrix*, wasn't too far behind…

THE LATEST NEWS FROM MAY 1983

With Ultimate about to fly high with *Jet Pac*, Imagine staff flying higher in Ferrari's, Sinclair starts a computing price war. Horace meets some spiders and new magazines appear for BBC and Dragon users – it's welcome back to May 1983. Richard Burton points the way.

» Ultimate arrives on the home computing scene with two stunning new games. Software houses start bricking it…

The first advertisements for a new software house started to filter into the mainstream computing magazines of the time. The company, Ultimate: Play The Game, began advertising the first of its wares, two Spectrum games called *Jet Pac* and *Pssst*.

Although the games had not been officially previewed, the rumblings were that they were a step up from the usual Spectrum software offerings, having a much more professional feel to them. Ultimate was staying tight-lipped about its new titles, preferring to let the software do the talking, something it would continue throughout the life span of the company.

The first inklings of excess at Liverpool-based software house, Imagine, were being reported in the press. Imagine, which famously imploded on the BBC2 television programme *Commercial Breaks*, was a fairly new company but had enjoyed immediate success with titles such as *Arcadia* on the Vic-20 and Spectrum.

There were reports that several staff members at Imagine had taken delivery of top-of-the-range cars including a Ferrari Mondial, Ferrari 308 GTS and BMW 735i. Bruce Everiss, the general manager, was quoted as saying: "We are a dynamic industry so we all drive dynamic cars." Even 17-year-old programmer Eugene Evans was given an Escort XRI, even though his driving test was a month away. Everiss said: "We would have got him something better but the insurance would cost a lot more." If nothing else, Imagine certainly knew how to spend its profits. Fellow Liverpudlian software creator, Bug-Byte, wrote a letter to *Popular Computing Weekly* pointing out that this was the exception rather than the norm regarding software house motor vehicle preferences. It wrote: "Tony Baden, co-director, is awaiting delivery of a Robin Reliant complete with GT stripe, and our newly appointed creative and artwork head, Les Harvey, is believed to have ordered a Skoda Estelle even though he thinks it's a bit flash." The letter concluded with, "Stop press. Harvey distraught. Estelle not available. Yugo ordered."

In between laying out large wads of cash for spanking brand new cars, Imagine also found time to release its two latest creations, *Molar Maul* for the Spectrum and *Frantic* for the Vic-20.

Sinclair Research, not content with out-selling every newcomer to the computing market, decided to cut prices on its systems, lowering the 16K machine from £125 to £99.95, and dropping the 48K from £175 to £129.95 and even the ZX81 looked competitive with a wallet-friendly price tag of just £39.95.

The general consensus for the drastic pricing realignment was due to the constant wave of new machines seen as possible threats to Sinclair sales. With many of these systems less powerful and, when initially announced, lower priced, they may have been seen as a viable alternative. With Sinclair effectively pricing those machines out of the market and making the Spectrum the only real colour machine under a hundred pounds with any sort of software base to its name, the empire of Clive Sinclair looks to be on a very firm footing.

So who would be first to react to the news? Well, virtually everyone as it turned out. Commodore immediately announced a £50 drop in price for its Vic-20 machine

» *Molar Maul* (Imagine): A new game about brushing teeth? Next week: 'Bottom Wiping Simulator'…

» New TI99/4a purchasers received free bread when buying a new system rather than money off. Ideal for toasting in the cartridge slot.

» Here's just one of the cars purchased by Imagine's staff during their heyday. That's Imagine Software and not Publishing…

» The Newbrain also received a price reduction in the computer price wars. Quite who actually bought one is still a mystery.

» The Interface 2 and ROM cart format was set to revolutionise software loading on the Spectrum… sort of.

and Atari decided to follow suit and trim the price of its Atari 800 computer down to £299 from £399.

Texas Instruments decided it would be better to give away freebies rather than reduce the system price so it included a £100+ package of extras for each new TI99/4A purchased during the summer. It would include a pair of joysticks, TI cassette recorder and a ROM cartridge, among the giveaways. Even Grundy Business Systems lopped off £25 from the price of its Newbrain computer, not that anyone had bought one in the first place.

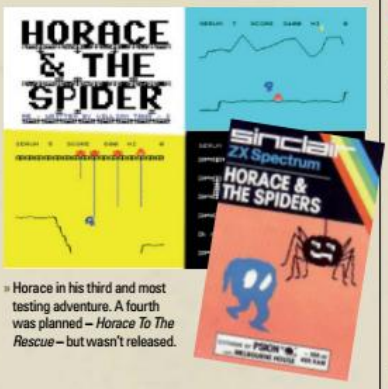
Furthermore, Acorn and its as-yet-unreleased Electron computer, was reportedly considering altering its launch price to fall into line with the competition. With the Electron's impending release with the particularly unattractive price point of £150, the undergarments of Acorn head honcho Chris Curry must have been a fairly breezy place.

However, he did muster a counter-attack claiming that the Spectrum couldn't compete with the Electron's "superior performance in the same price bracket." Was Curry stirring the melting pot of computer price-wars by claiming Sinclair was running scared at the arrival of the Electron? This one could end up in a fight… in a pub… or something… one day.

Another company that was gearing up for a new system release was Memotech. Known mainly for producing RAM packs for the ZX81, it decided to turn its hands to bringing out a brand new micro. The MTX500 would feature a top-notch keyboard, a Z80A CPU and 32K RAM, with an expected launch price of around £250 when it is unveiled at the London Computer Fair in June.

While not as attractive looking as Memotech's next offering, the gloriously black and imposing MTX512, it was still a good machine. As with any new entrant into the market, there was one question mark hanging over the machine: would anyone be producing software for it?

The impending release of the Sord M5, initially expected to have been ready and available for consumers in November, was almost here. In a cunning reversal of the current price trend set by almost every other computer manufacturer, Japanese company Sord decided to increase the



» Horace in his third and most testing adventure. A fourth was planned – *Horace To The Rescue* – but wasn't released.

» The MTX500 wasn't as pretty to look at as its bigger sister the Memotech MTX512. Games, you say? Er…

WHAT THE MAGAZINES WERE SAYING...

Your Computer

Calling itself "Britain's biggest-selling home computer magazine", *YC* was certainly a good all-round publication with a balanced mix of gaming and hardware. The cover feature this month detailed the story of a man and his Spectrum-powered ghost-hunting equipment helping in his quest for paranormal activity. PK energy was rising or was that the ZX power supply?

Dragon User

With the first issue of *Dragon User* came a feature highlighting the good and bad points of the Dragon 32 and its nearest rivals. Unsurprisingly, the usual 8-bit suspects faired moderately with individual machines pulled up on their unique quirks while the Dragon machine was rated as having "great potential." Yeah… as a doorstop.

Sinclair User

SU's User Of The Month was Alan Howell, a guy who used his CB radio to transmit Spectrum programs. When asked about why he bought a Spectrum he replied: "I wanted to buy a really good calculator and that's what I thought I was buying. I admit when I first took it home and realised it was a computer, I was really annoyed."

CHARTS

MAY 1983

VIC-20

1. Arcadia (Imagine)
2. Panic (Bug-Byte)
3. Amok (Audiogenic)
4. WackyWaiters (Imagine)
5. Cosmiads (Bug-Byte)

SPECTRUM

1. The Hobbit (Melbourne House)
2. Time Gate (Quicksilva)
3. Penetrator (Melbourne House)
4. Arcadia (Imagine)
5. Vu-3D (Psion/Sinclair)

DRAGON 32

1. Donkey King (Microdeal)
2. Katerpillar Attack (Microdeal)
3. Space War (Microdeal)
4. Dragon Trek (Salamander Software)
5. Alcatraz (Microdeal)

MUSIC SINGLES CHART MAY '83

1. True (Spandau Ballet)
2. Temptation (Heaven 17)
3. Dancing Light (Galaxy ft. Phil Fearon)
4. Keep Feeling Fascination (Human League)
5. Candy Girl (New Edition)

» *River Raid* (Activision): One of the great games on the Atari 2600. Score big and get yourself a high-score patch.

» *Space Zombies* (Mikro-Gen): In a similar vein to Imagine's *Arcadia*, the smoothness and gameplay just weren't comparable.

price of its computer by £20 to £190. Something must have got lost in the translation process somewhere.

Meanwhile, when he wasn't preparing for a spot of pinstriped fisticuffs, Clive Sinclair, with the aid of Psion, was developing ROM-based cartridge software for the Spectrum. With a proposed release date set at 'late summer', the pairing was deep in the development stage of producing the interface to run the software, later to be called Interface 2.

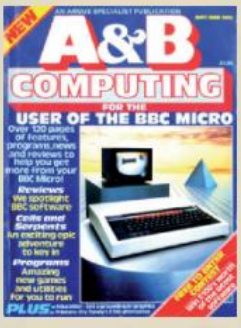
With six titles already set for release and a projected price tag per title of around £10, was this going to be the new software format of the future for Sinclair? With just ten titles eventually released, a resounding "no" can still be heard echoing through the darkened halls of Sinclair Research to this day. Bit of a shame really.

Psion and Melbourne House also announced that their third game in the *Horace* trilogy was ready to be released. *Horace & The Spider* would be available to buy at the end of the month and was also going to be released, together with Horace's two other videogaming appearances, onto the ROM cartridge software format.

» Activision's free newsletter was not only a good read, you could also win sew-on patches for high scores.

The latest edition of Activision's Fun Club newsletter, the quarterly read for gamers and fans of Atari 2600 software and Activision in equal measure, were plopping though letterboxes across the country. They detailed a few of the new releases that were in readiness for their big summer sales offensive. Three titles Activision was particularly pushing were *Sea Quest*, *Spider Fighter* and, the most excellent, *River Raid*. You want simple and addictive retro-gaming? Give *River Raid* a bash.

The Dragon 32 and its followers finally got a magazine to call their own this month when *Dragon User* hit the



» As the computing market grows, new publications are born on a regular basis. This months' new boy is *A&B Computing*.

NEWS

MAY 1983

30 May 1983 saw Surrey take on Essex in a County Championship match. Nothing particularly unusual with that except that Surrey managed to get bowled out for a record-busting innings of just 14 runs.

The Surrey captain, when questioned about him team's first innings performance, said: "We hadn't batted awfully well." A quite superb English understatement. With the second innings looming, Essex enforced the follow-on and Surrey, with either voodoo magic or a cricket bat the size of a Mini Metro, managed to register 185-3 to claim an unlikely draw.

» Surrey came good in the second innings… by cracking the ball under the sofa and running 67 off one delivery…

More sports news came with Liverpool announcing that legendary manager Bob Paisley was to retire from running the team, and his assistant, Joe Fagan, would be his replacement. Fittingly, Paisley ended his final season in charge by winning the First Division Championship, Charity Shield and League Cup. His final game in charge was a league match against Watford on 14 May 1983.

Return Of The Jedi, episode six of the *Star Wars* movie series, made its worldwide debut in the US of A on 25 May. Featuring Jabba's Palace and its wandering B'omarr Monks, Sarlacc Pit shenanigans, Darth Vader and the Emperor's demise and the cutesy furball Ewok's, *Return Of The Jedi* was a solid end film for the first of three planned trilogies.

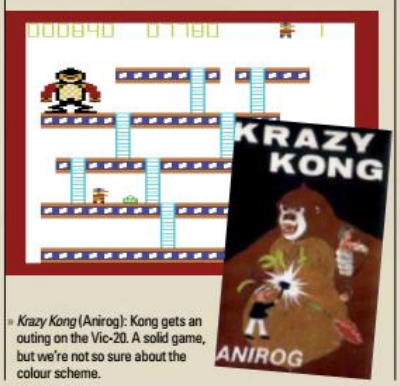
» Mr Fiddly Pants Lucas releases a Super Special Special Extra Special Edition of *ROTJ*. Sebastian Shaw is erased… heresy we tell you.

newsstands during May. It was mainly a mix of tech-related features and type-ins with just the merest hint of games wafting through its pages.

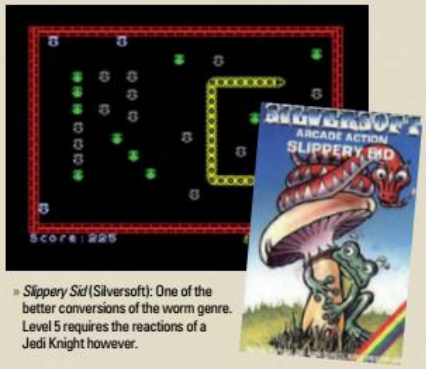
A&B Computing, the first issue of a bi-monthly magazine aimed squarely at the BBC owners who hadn't taken a shine to the *BBC Micro User* magazine, itself only on its third issue, was available to buy during May and June.

With software gradually becoming better and more plentiful with each passing month, the reviews pages of the computer magazines were becoming more prominent. The software was still largely clones of *Space Invaders*, *Centipede* and *Pac-Man* games though, because software houses tried to cash in on the insatiable appetite of gamers who wanted these early arcade conversions.

Issue 14 of *Sinclair User* glanced its critical eye over *Space Zombies*



» *Krazy Kong* (Anirog): Kong gets an outing on the Vic-20. A solid game, but we're not so sure about the colour scheme.



» *Slippery Sid* (Silversoft): One of the better conversions of the worm genre. Level 5 requires the reactions of a Jedi Knight however.

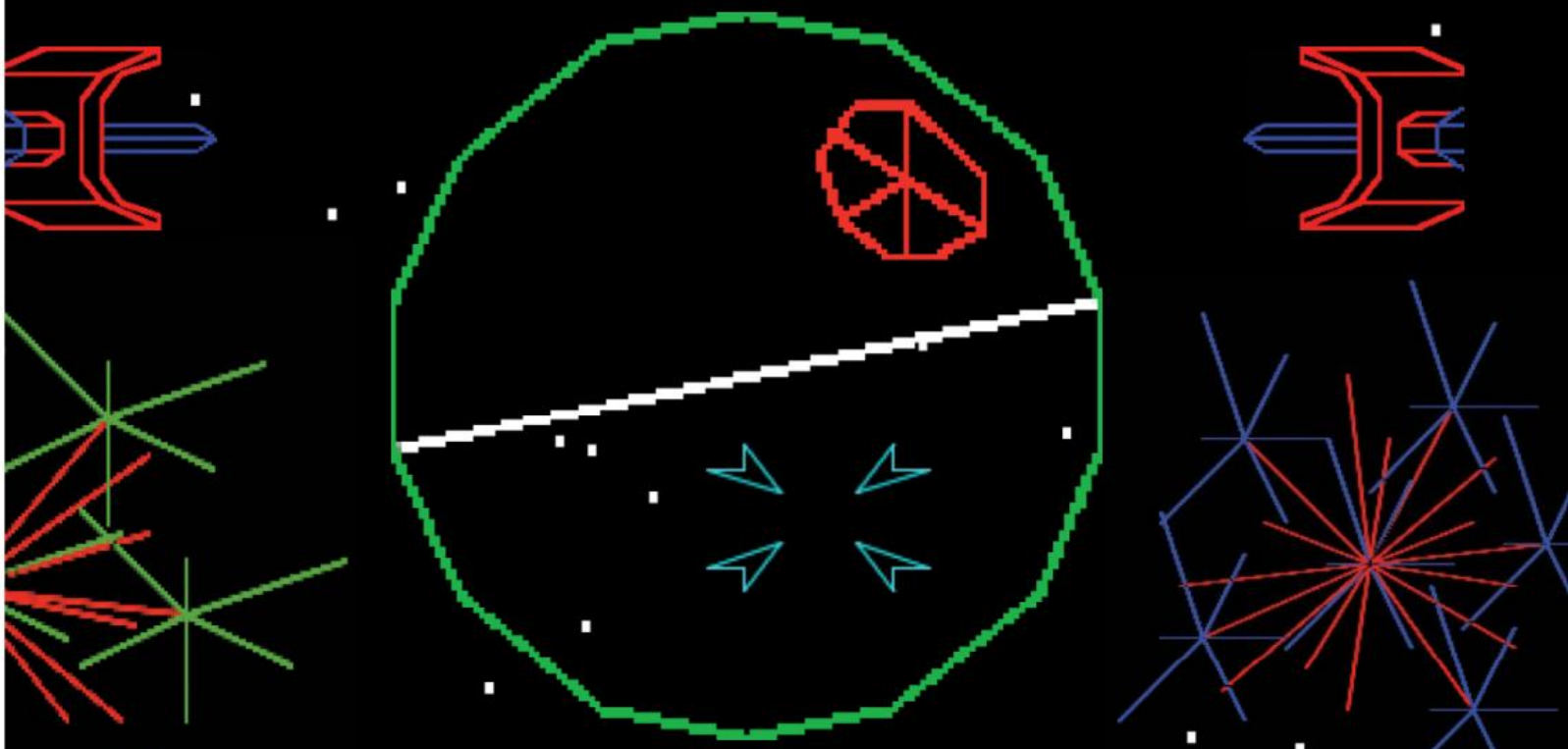
(Mikro-Gen), *3D Tanx* and *Centipede* (both DK'Tronics) and *Sub Track* (Amba Software). *Computer & Video Games* ran the rule over *Defender* (Atari, Atari 400/800), *Super Glooper* (Psion, ZX81), *Schizoids* (Imagine, Spectrum) and *Cyber Rats* (Spectrum, Silversoft).

Home Computing Weekly featured a swathe of reviews throughout its May issues with *Slippery Sid* (Silversoft, Spectrum), *Invaders* (IJK Software, BBC), *Space Attack* (Romik, Vic-20), *Skyhawk* (Quicksilva, Vic-20), *Krazy Kong* (Anirog, Vic-20), *Mad Martha* (Mikro-Gen, Spectrum) and *Ocean Trader* (Quicksilva, ZX81) among the software rated.

The slightly more serious weekly magazine, *Personal Computer News*, rated *Headbangers Heaven* (Llamasoft, Spectrum), *Motor Mania* (Audiogenic, C64), *Dictator* (DK'Tronics, Spectrum), *Starship Command* (Acornsoft, BBC), *Nowotnik Puzzle* (Phipps Associates, Spectrum) and *Harvester* (Pixel Productions, Vic-20) during its May issues.

THE MAKING OF...

STAR WARS



A long time ago, but not in a galaxy far, far away, Atari created an incredible vector graphics videogame based on George Lucas's Star Wars film. Darran Jones uses the Force to track down its project leader, Mike Hally, to discover how the hit coin-op was created. Many Bothans died to bring you this information

» Barriers could be a real pig to avoid and get more numerous as the game carried on.

The *Star Wars* saga is easily one of the most famous film franchises of all time and has made its creator George Lucas a very rich and powerful man. It also happens to have had more videogame adaptations than any other film – the first, an Atari 2600 re-creation of *The Empire Strikes Back*, was released in 1982 – and, some 26 years later, it shows little sign of slowing down. You can read about the franchise's rich and varied history on page 24 of this fine issue, as our current focus is on Atari's *Star Wars* coin-op – easily one of the greatest videogames to ever bear the *Star Wars* name.

Impossibly slick, with booming digitised speech and an instantly recognisable sit-down cabinet – a smaller, stand-up version also existed – *Star Wars* was a thing of beauty and remains an utterly absorbing shoot-'em-up and a stunning example of how well videogames could capture the essence of a completely different medium. Amazingly, however, it didn't actually start off as a *Star Wars* videogame at all…

"The *Star Wars* game came about because I wanted to do a 3D space war game. I mean, I really wanted to do a 3D space war game," reveals Jed Margolin, *Star Wars*' main programmer and the driving force behind the classic game, on his personal website. "It's why I went to work for Atari. Even before going to Atari I had already worked out the math for 3D that did not use homogeneous co-ordinates. The use of homogeneous co-ordinates just gets in the way of understanding what is really going on in 3D."

"This is a first-person game using 3D perspective graphics."

With this simple sentence – part of Jed's far larger game idea proposal – *Warp Speed* was put forward as a potential game project. This was 14 November 1979. Effectively *Battlezone* in space, the document stated that *Warp Speed* would place the player in the cockpit of a space fighter and would pit them against a like-minded opponent – two cabinets could be linked together to achieve this – while the stars and enemy space fighter would be handled as three-dimensional projected figures. The computer opponent would self-adjust to the player's skill level and games would be time-based, with the player winning bonus time depending on how well they played. There was even a suggestion to tie it in with a possible space movie, or *Star Wars II* as Jed called what would eventually become *The Empire Strikes Back*.

Warp Speed was given the green light and Jed began to assemble his team. Greg Rivera was on programming duties, while Ed Rotberg would step in as the game's project leader. But then disaster struck. "Ed, along with Howard Delman, left the company and started their own company, Vidia, which was later bought by Nolan Bushnell and folded into Sente. Greg and I needed a project leader and selected Mike Hally. Usually, the project leader selects the team, but in this case the team selected the project leader." After an initial stall, *Warp Speed* was back on.

"Jed was a truly terrific hardware engineer for Atari and had been working on a higher-powered vector graphics hardware since Atari had had some success with games such as *Asteroids*, *Lunar Lander* and *Gravitar*," recalls Mike about his early recollections of working on the game.

"As I remember, I had finished *Gravitar* with Rich Adam and was working on some new game concepts when someone in the licensing/marketing department approached the engineering group to find out if the new hardware Jed Margolin was working on was capable of doing a *Star Wars* game."

Mike was soon hard at work creating storyboards with Dave Ralston, which would not only describe the style and flow of the game, but would be used by Atari to potentially pitch *Warp Speed* to the newly formed LucasGames. After a few internal meetings, Mike was ready to pitch the *Star Wars* game design to the licensing group at LucasGames.

"I remember the meeting going very well, and sometime shortly after this meeting I was informed that we had a licence agreement with Lucas to do the coin-operated *Star Wars* project," recalls a clearly pleased Mike. "I was very excited to be a part of this experience with Atari and to be rubbing shoulders with the likes of George Lucas. As far as Jed picking me to be the project leader, I really do not remember how much control he had in this decision, but I'm pretty sure he did have some major input in the final decision."

Warp Speed officially turned into the *Star Wars* project in January 1982, a good 26 months after Jed first pitched his idea. With the game ready to go, Mike and Jed quickly assembled the rest of the team who would take part in *Star Wars*' gruelling 18-month schedule. Earl Vickers took on the

What's In A Name?

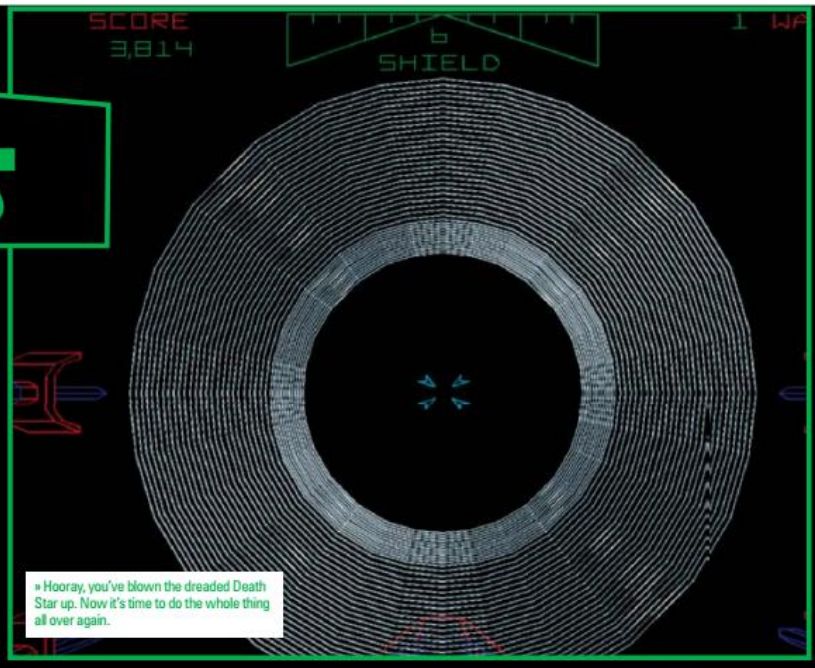
Back in the early days of videogaming, Atari was notorious for not crediting the authors of its games. The arcade release of *Star Wars* was no different, so Mike and the rest of the team hatched a cunning plan to ensure that their hard work wouldn't go unnoticed.

Whenever you make the final approach to the Death Star, the huge space station has either 'May the Force be with you', or the names of the team displayed on its side.

"There is a control on the monitor that allows all the lines to become visible so that the operator can make adjustments," reveals Mike about his ingenious idea. "These lines were not meant to be seen. Atari used to be afraid to publish the names of the developers in fear that other companies would steal their talent."

"Normally on the Death Star, as it zooms in, you just see what looks like random dots or lights. However, with a tweak of the monitor you can see the interconnecting lines. If my memory serves me right, Atari management did not know about this until sometime after production was well underway. I also believe that after this the game teams could add in the attract mode, a credit screen listing names and positions of team members like movies did. You need to give 'credit' where credit is due as they say!"

THE MAKING OF... STAR WARS



» Hooray, you've blown the dreaded Death Star up. Now it's time to do the whole thing all over again.

Making the cut

It's rare when all the ideas during the development process make it into the final game and *Star Wars* was no exception. While Mike is more than happy with the end product, a number of ideas never actually made it into the final game. Initially it was going to be possible to have two machines linked up – a throwback to Jed's original *Warp Speed* pitch – but it never happened. While the idea was going to be finally implemented in the sequel, it never came to be. Perhaps the biggest change that never appeared in the final release was the idea of a timer that would appear in the form of diminishing fuel. Blowing up the Death Star would result in you being rewarded with a completely new fuel bar, while failing to hit the exhaust port would simply see you carrying on the next stage with whatever fuel you had left. It's certainly a bold concept and is a great way of ensuring that one person doesn't completely dominate your machine, but we're glad they went the other way.

duties of audio engineer; Eric Durfey was on board as technician, while Norm Avellar was eventually roped in to assist Greg Rivera on programming duties. According to Jed, the team went through several technicians before they eventually arrived at Eric because "previous techs didn't want to spend their time on a game that was a guaranteed loser". While the tiny team no doubt seems ludicrous in today's climate of huge budgets and large work teams, Mike feels that it was the perfect recipe for success.

"It was really easy to communicate ideas and issues with each other because we were all located in the same lab area," he explains. "We became a family as such, as we spent so much time with one another at work. We had our moments of fighting, arguing, laughing and our moods went through many highs and lows. Greg and I were the only team members married at the time and we both had small children at home. Everyone on this team was very good at their skill so there was a lot of mutual respect for each other. We all believed in this project so it made it fun to come to work each day and see the progress the game was making. With each step, the rest of the company started to believe in us and saw the potential the product would have."

"WE BECAME A FAMILY, AS WE SPENT SO MUCH TIME WITH ONE ANOTHER AT WORK" MIKE ON HIS DEV TEAM

It may have all come good in the end, but a hell of a lot of hard work had to be crammed into those 18 long months. It was even trickier for Mike, as the eventual success of the finished game meant that he was still working on it long after it came off the final production run. Unsurprisingly, with such a long gestation period and small team, the path from home-grown idea to mega-hit arcade game wasn't without its fair share of problems…

» You'll never forget the first time *Star Wars*' huge towers loom up in front of you; or how hard it is to dodge the damn things!

"This was the most intense project that I had ever been involved in, let alone being the project leader and game designer," recalls Mike. "Every single day was a battle of issues involving every department associated with *Star Wars*' development. From a team perspective, we were up against shared company resources, along with trying to create the impossible. New technology, a game worthy of the *Star Wars* name and a product that would out-earn any other game of the time were just some of the daily pressures we faced. And let's not forget the creation of a brand new controller, voice and music to the mix? Then, of course, there was the added pressure of creating a production-line product with a dead line that just about made us all go insane. Dealing with the licensing group just added another layer of complexity and complicated getting our work accomplished. *Star Wars* was also released in multiple cabinet configurations and was produced in two different production facilities to add to the overall difficulties. UL and FCC approved? The list goes on and on… and let's not forget the most important issue of all… this game needs to be fun for every type of gamer out there whether casual or hardcore."

Of course, the blessing and curse of being able to create a *Star Wars* game was having access to that actual licence, for while it potentially meant that the game would receive a crucial head start in the arcades, it would also mean that the project would be constantly under the steely eye of George Lucas.

"From the initial meeting with the licensing group to all the follow-up meetings with the games department group there was one consistent theme that the Lucasfilm groups had… they were all very protective of the *Star Wars* universe and every detail had to be accurate," continues Mike. "If I had any element that was not accurate, they instantly made me aware and it had to be changed. Since they were also involved in game development, they did understand some of the decisions that I made."

The team was given a tremendous amount of resources to draw upon and had access to virtually every aspect of the film. They were sent a copy of the original script, numerous toys from which to draw inspiration and plenty of original sketches that pretty much covered every element of the movie. All the music was available for reference – as were numerous voice scripts – the only caveat was that every little detail had to be fed back to the protective publisher.

"The process used to keep them [Lucasfilm] in the loop was to invite them down to Atari to view game development until we had a system that we located on their premises," begins Mike, about the gruelling process. "I would take new ROMS (memory) up to Lucasfilm and replace them in the hardware along with a list of new features this version of the program contained. I would always give a demo of

He's Got Game

Mike Hally had quite an illustrious time at Atari's coin-op division as the following games prove

A.P.B. (ALL POINTS BULLETIN)

Released: 1987 Role: MLH

Great little game that sees you playing a cop who must pull over various law breakers within a set time limit. It's go-anywhere gameplay could be seen as an early blueprint for the *Grand Theft Auto* franchise.

AREA 51

Released: 1995 Role: Game Design

Fairly bland, by-the-numbers lightgun game that tries desperately hard to emulate the success Sega had with the genre but fails miserably. There are some cool aliens to destroy, but this is pretty generic stuff.

BLASTEROIDS

Released: 1987 Role: MLH

Atari's fourth game in the *Asteroids* series offered a huge boss to fight, plenty of different power-ups and an enjoyable two-player mode. A solid shooter that's only let down by its muddy looking visuals.

FIREFOX

Released: 1983 Role: Project Leader

This Laserdisc release was based on the 1982 Clint Eastwood film (which in turn was based on Craig Thomas's 1978 thriller). Taking on the role of Eastwood's character, it features several sequences from the film.

GAUNTLET DARK LEGACY

Released: 1999 Role: Producer/Game Design

This sequel to *Gauntlet Legends* offers several additions such as the ability to make slow and fast attacks, as well as four new characters: Sorceress, Knight, Dwarf and Jester.

GAUNTLET LEGENDS

Released: 1998 Role: Producer

Unlike many games of the time, this fun update of the classic franchise enabled players to use passwords so characters could be saved. It was also the first time you could level up in the franchise.

GRAVITAR

Released: 1982 Role: Designer

Great little shooter that had impressive visuals and varied gameplay that paved the way for the likes of *Oids* and *Thrust*. Yes, it can be extremely hard at times but perseverance reaps its own rewards.

AKKA ARRH

Released: 1982 Role: Designer/Programmer

Early release that isn't currently emulatable in MAME, so you're going to have a tricky time playing it unless you own an original cab. It was originally known as *Target Outpost*.

INDIANA JONES AND THE TEMPLE OF DOOM

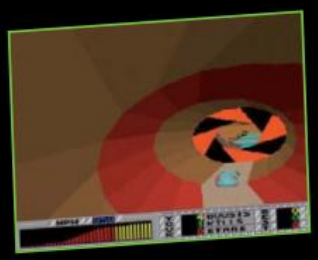
Released: 1985 Role: Producer

Fun take on the film that has Indy whipping snakes and Thuggee guards, swinging over chasms with his whip and recovering the Sankara stones. The highlight is easily the mine chase.

ROAD RUNNER

Released: 1985 Role: Director

It's a great use of the *Road Runner* licence, but certain sections are so difficult that all the 'meep meeps' and cute animations in the world won't stop you from wanting to put your head through the monitor's screen.



S.T.U.N. RUNNER

Released: 1989 Role: Overlord

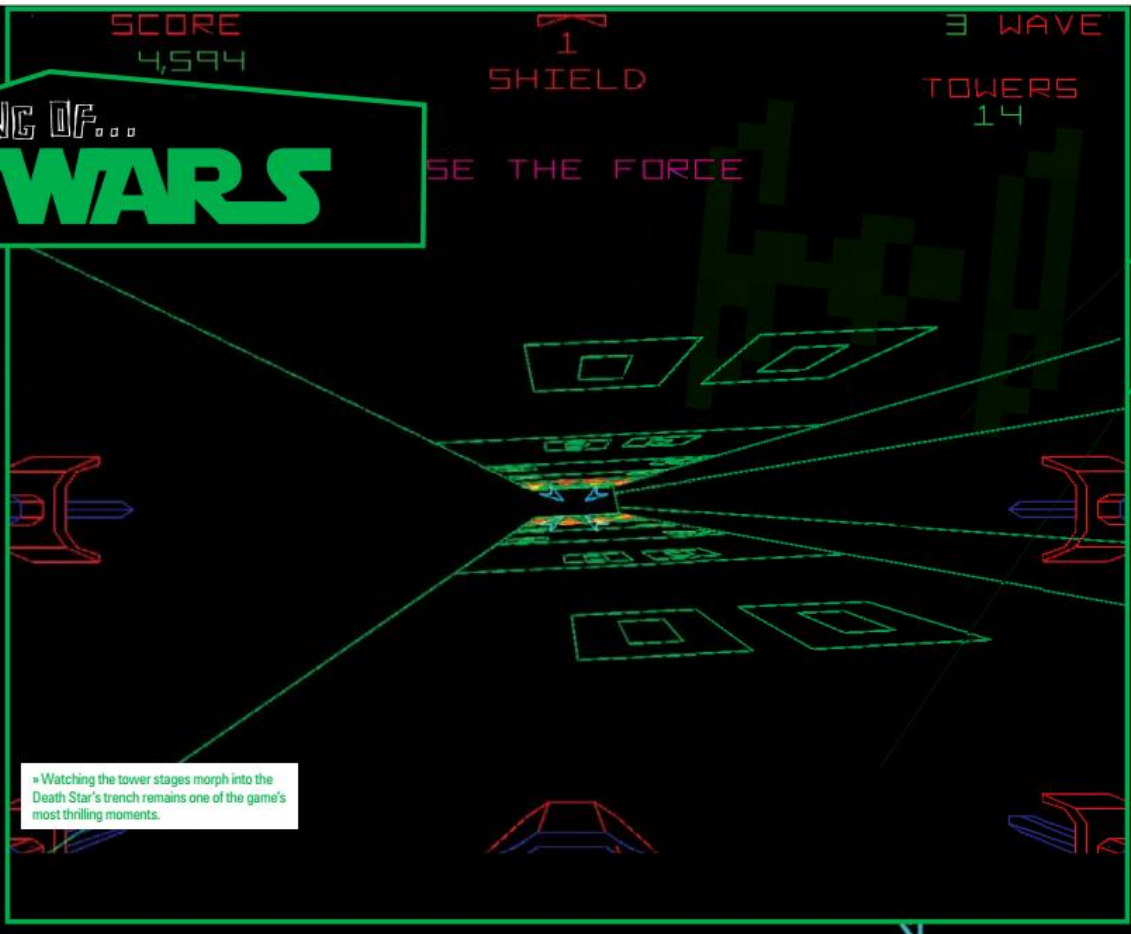
An excellent, fast-paced futuristic racer that combines impossibly slick visuals with fast-paced action to create an exhilarating experience that will still leave you breathless with excitement.

THE EMPIRE STRIKES BACK

Released: 1985 Role: Product Manager

This sequel to *Star Wars* does push the technology – there's lots happening on screen – but it's not quite as fun to play. A worthy sequel, but not as spectacular as the game that spawned it.

THE MAKING OF... STAR WARS



» Watching the tower stages morph into the Death Star's trench remains one of the game's most thrilling moments.

the current game design and discuss what would be coming next. They had to approve all game text, copyright information, cabinet artwork, operator manual and so on. Just think of all the money this company has made on licensing books, games and toys. My last memory of working with Lucasfilm on this project was driving the Atari truck to the ranch to drop off a production sit-down cabinet, which was part of the licensing agreement. It was a great feeling knowing that we had accomplished so much and everyone was really pleased with the final outcome."

Although Mike has fond memories of Lucasfilm, he'll be the first to admit that working with a company that had such a fastidious attention to detail meant that sometimes they weren't always on the same wavelength. A typical example is a memo posted on Jed's website, which shows a list of small and seemingly petty changes that Lucasfilm was adamant on having corrected. One note insisted that shields were made of energy, not metal, as pilots wouldn't be able to fight if a sheet of metal obstructed their view whenever they were fired upon, while no 'gunner exists in an X-Wing because it is piloted by a single person with the help of an R2 unit'. The best, however, was a chastising for using the term 'parcels' instead of 'parsecs', which was then followed by a long explanation saying that even this wouldn't be the appropriate term as even a single parsec would be 3.26 light years and the Death Star wouldn't be visible at that range. With no Earth term being suitable it was suggested that 'light tics' should be used instead. Fortunately, Mike always took these requests in good humour.

"I remember laughing to myself because they were overly consumed with these little tiny issues and we had been worried about some other much bigger issues," Mike recalls about that particular memo. "The team was really relieved to hear back from Lucas and we were glad that their main points were so minor."

While Lucasfilm proved to be far more receptive than the team had originally imagined, Mike and the rest of the crew nevertheless found themselves constantly under pressure due to the sheer amount of interest that the potentially lucrative licence was constantly generating. "Oh it never stopped," continues Mike. "There were two main areas of extreme pressure. One was from the company and their need for this game to get finished and be a huge success, while the other was internal pressure from within the team to be a part of something special and make a name for ourselves. I think every development team at Atari was under a lot of pressure to perform and create magic, but the *Star Wars* coin-op was a new and different venture for us so it just magnified the expectations everyone had. Everyone on the team cracked at one point or another during the development but we all stood the test of time. We eventually went on to work on many other games together so I would have to say that as a team we overcame the fear of pressure and learned to actually enjoy it."

"EVERYONE ON THE TEAM CRACKED AT ONE POINT DURING DEVELOPMENT"
MIKE ON PRESSURES FACED BY THE TEAM

When you consider how popular *Star Wars* now is, it's difficult to imagine how the eventual coin-op could have ever been seen as anything less than a huge hit. However, when you look at the type of games that were available at the time, the fact that it was released in what would become one of the most trying times for the industry (the great videogame crash) and the technology that Atari was striving to perfect, it's no real surprise that it wasn't always plain sailing. While this wasn't the first vector graphics game that Atari had worked on, it was going to have to be sufficiently more fast-paced than the rather sedate speed of *Battlezone* if it was to capture the exhilarating excitement of the film's final battle. Luckily, this is where Jed's efficiency became readily apparent and the talented programmer ended up making the visuals a little too spectacular.

"Originally, the 3D math that *Star Wars* was capable of performing allowed any object (and the observer) to be in any orientation," confirms Jed. "However, it was eventually decided that players might be confused by being approached by an upside-down TIE fighter, so they were forced to be

» Our very own *Star Wars* arcade cab. Darran currently has the high score... Honest.

right-side up most of the time."

"We ended up going with vector graphics because Atari felt that they were best suited to *Star Wars*' development and what it required based on the original game designs," continues Mike. "It was one of the first three-dimensional games and at the time it was the only display that we had access to that had a chance of pulling off what we wanted to achieve. At this time in the evolution of videogames almost every coin-operated game had its own custom hardware to maximise the needs for the specific requirements of the game."

Despite the difficulties of using vectors and specific custom ROMs, all of the hard work eventually paid off in rather spectacular style. Few gamers will forget the first time that they saw a whole squadron of TIE fighters roar past them, or how they sat entranced as they watched the towers they were blasting at spin crazily around until the Death Star's ominous looking trench was formed. Massive fireballs exploded in front of your very eyes, Vader's TIE would swoop ominously around the screen, impervious to your firepower, while later runs through that dangerous trench had you dodging numerous barriers that speed towards you at ever-quickening speeds. The simplistic-looking, but oh so striking, vectors created a beautifully immersive atmosphere that was further enhanced by the carefully picked snatches of music and speech that played throughout your assault.

"The Force will be with you, always," "Yahoo", "Use the Force" and "You're all clear, kid" were just a small number of the classic lines that greeted your ears and the experience was only heightened by John Williams' wonderfully rousing – if shortly looped – score. For many though it was the beautifully crafted sit-down cockpit and cabinet that helped to give off that true *Star Wars* experience. And amazingly, it almost didn't happen.

The cabinet was initially

THE FORCE IS STRONG WITH THESE ONES...

The numerous conversions of Star Wars

SPECTRUM

While the majority of 8-bit home conversions are fairly respectable, even the most hardcore Speccy fan will admit that this port isn't without a few issues. Yes, it's very accurate and sports some nicely drawn visuals, but the sluggish pace and lack of sound in-game does dampen the overall experience somewhat. It's certainly a fun game, but it's a shame it's not a little faster.

AMSTRAD

Considering our Amstrad background, it's somewhat difficult to champion the machine without being called biased. Nevertheless we're staunch defenders of the Amstrad port, even if it does lose out ever so slightly to the far nippier Commodore 64 version. A solid and enjoyable conversion.

COMMODORE 64 (DOMARK VERSION)

The graphics are horrifically chunky, but there's no denying that this is otherwise a decent port of the classic arcade hit. Boasting a great rendition of the theme tune and solid in-game spot effects, this is great stuff and well worth a quick blast. A slightly iffier version exists in the US and was created by Parker Bros, not Domark.

AMIGA

Many purists will argue that this is actually superior to the original arcade game, and it's very easy to see their point. Mouse control gives you amazing accuracy over your cross hairs; the graphics are extremely faithful to the 1983 coin-op, while the addition of extra sound chips is the icing on a very pretty cake.

ATARI 2600

We've seen some 2600 games suffer from dreadful flicker, but this Parker effort (ironically Atari didn't have the actual rights to produce its own home version of its own coin-op) is truly atrocious. A real pity, as the actual gameplay is pretty good. It's just a shame you can't play it without getting a killer headache.

ATARI ST

While it's extremely similar to the Amiga version, Commodore's machine just clinches it thanks to slightly clearer speech (there were more samples on offer as well) and sound and far smoother, slicker visuals. It's still a strong conversion of the classic game though and a must-have for Atari ST owners.

ATARI 5200

Although it boasts some decent visuals, it's very hard to recommend this 5200 effort, mainly because of the truly horrific collision detection that rears its head throughout the game. It's incredibly frustrating to watch TIE fighters not get blown apart by your perfectly placed hits and the clunky controls are the final straw.

COLECOVISION

This is so much better than the 2600 and 5200 ports that it's not funny. Boasting far superior visuals, little flicker and solid controls, this is easily one of the better conversions that's available on the earlier systems. Yet another ColecoVision game that was better than its Atari 2600 counterpart and a stunning conversion in its own right.

ATARI 8-BIT

Although there's a fair amount of flickering on display – although nowhere near as bad as the 2600 version – this is a surprisingly good conversion and nips along at an incredibly fast pace. In fact, after some extensive play it's probably become our favourite 8-bit version of the game, even beating the mighty C64 effort.

DOS

Its limited colour palette means that it's unable to match the sheer vibrancy of the Amiga and ST versions and the sound is rather disappointing, but this is otherwise a fairly solid conversion. It plays at a decent pace and has great control due to utilising the mouse. It's a bugger to run in DOS BOX though so be prepared for a lot of fiddling around.

BBC MICRO

We were pleasantly surprised by the BBC Micro version of *Star Wars*, as it's actually pretty darn slick. Faster than many of the other 8-bit versions, with visuals that are somewhere between the Commodore 64 and Amstrad outings it's a surprisingly faithful conversion that should be in any BBC owner's collection.

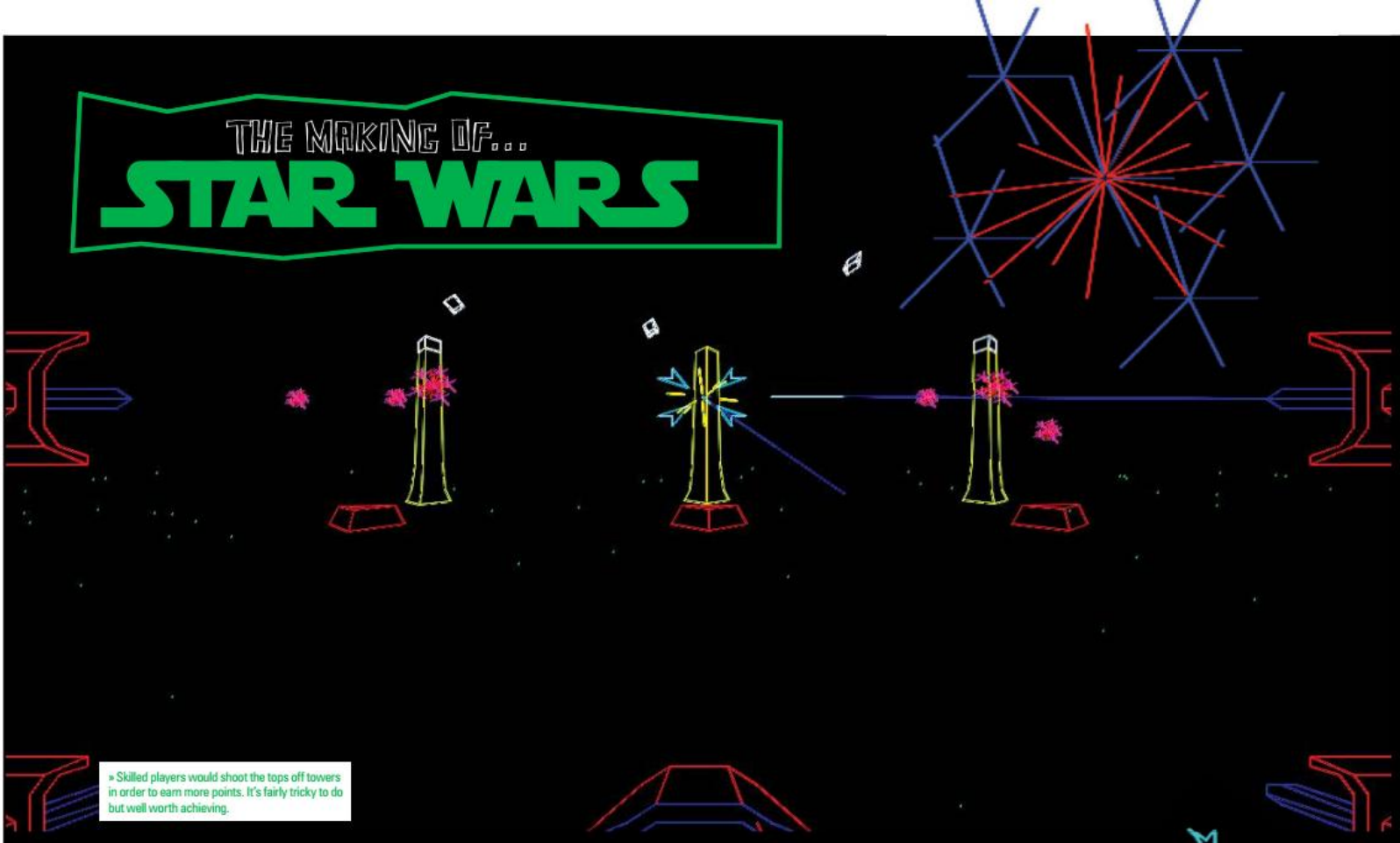
ACORN ELECTRON

Like far too many Electron titles, this game plays like a slightly senile relative of the BBC Micro version. It's comparatively sluggish and sadly monochrome, making it very difficult to target the fireballs, but generally it's as faithful as Electron owners could realistically expect from the underpowered machine.

APPLE MAC

With its razor-sharp graphics, scratchy samples and mouse-driven controls, Domark's Mac conversion is pretty faithful to the arcade original, albeit in monochrome form. It offers a surprisingly tough game, though, so only Jedis need to apply here, as anyone else is going to have a mighty struggle on their hands.

THE MAKING OF... STAR WARS



» Skilled players would shoot the tops off towers in order to earn more points. It's fairly tricky to do but well worth achieving.

equipped with a joystick, but early testing revealed that it confused people, as they didn't know which way to move it. Still, those early test periods proved crucial as it allowed Mike and the rest of the team to secure extra money for a far more suitable controller.

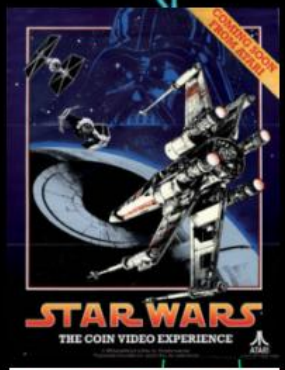
"The control yoke for *Star Wars* was a downsized version of the control from *Army Battlezone* (minus the palm switches), which came directly from an actual Bradley Fighting Vehicle (it was the gunner's control)," explains Jed about the unusual controller's original origins. "I wanted it to be based on every child's experience with riding a bike," continues Mike. "It was all about putting both your hands on the handles and pressing the triggers. Everyone immediately knows what to do and no one ever forgets. It was the perfect player input to play the game and really feel in total control of what you were attempting to do."

Although the device helped give the finished game that final touch, it was far from perfect as Jed reveals, which explains why the centring for the control yoke isn't always perfect. "*Star Wars* originally used a Pokey to read the pots," he reveals. "At that time, people either made their own A/D converter with a counter, a comparator, and a ramp, or they used Pokey. The Pokey was a full custom IC designed for the Atari 800/400 to read pots and keys, which gave it its name, 'POTs' and 'KEYs'. Unfortunately, Pokey does a really awful job of reading pots; it is guaranteed to produce occasional wrong values. The software to deal with it is pretty nasty. After Greg Rivera brought this to my attention I took the daring step of actually putting in a real A/D, the ADC-0809. Unfortunately, many people continued to use the original code to treat the A/D values as though they had come from a Pokey. Like Greg. That is why the controller in *Star Wars* keeps getting re-centred, usually badly."

It wasn't just the software that proved to be an issue, as creating the actual hardware wasn't without its issues either. "The device was a major undertaking for the mechanical engineering department," explains Mike. "I had started at Atari as a mechanical engineer in the Pinball Division so I knew exactly what I wanted and how it could be constructed. The entire project to get this controller into production was crazy. I remember there was a flood in the town where the moulds for the handle grips were being made, so we had to take a rowboat from one building to another to try to get some prototype handles ready for our initial field test."

Indeed, it was field tests that often proved to be essential for the success of many early arcade games and Atari was particularly adept at responding to the constructive feedback that was given at these focus groups.

"We had our very first focus group on 24 January 1983," explains Mike about the important event. "The actual gameplay on offer was very rough, as the tower and trench phases were just in the beginning stages of development. Overall though, the players thought the game had great potential and liked the idea of having voices and music



» Atari kept interest in *Star Wars* high by systematically releasing early, tantalising flyers.

Light side, Dark side

After working on such a huge project like Star Wars, we were keen to know Mike's favourite and worst moments about working on the classic arcade game.

"One of my biggest thrills was my trip back to New York where I did radio and television spots with our marketing department," Mike recalls. "It was kind of like being a rock star. I was on a television show and got to show off Star Wars in a sit-down cabinet that the whole world saw. It was exciting and a very new world for me to be a part of. Receiving my first six-figure bonus cheque at the age of 28 was also a moment that I will never forget. I still remember my body trembling when I opened up the envelope and saw that big number."

But what about the worst moment, Mike?

"That's easily the toughest question you've asked me," he begins. "There were definitely many times that I was so tired and fed up with everything that I just wanted to either die or quit, but then something good would always happen. If I'm honest, I can't really remember any one horrific moment. It's funny how things change when you have success, as all you can ever remember are the good times."

playing from the movie. They also thought that a sit-down version of the game would help add realism to he experience."

Responding to the aforementioned issues with the original joystick and the need for a bigger cabinet, work on *Star Wars* continued and Mike began to tally up the final costs for creating the behemoth cabinet. Total material costs came to an expensive $1,249.00. A large amount of money for the time, but a positively insane amount of cash when you realise that Atari's game was actually going to be released in one of the industry's most turbulent times. Were Mike and the team not worried about creating such an expensive product during the videogame crash?

"Now that you ask the question it does scare me," continues Mike, "although it was not my job to make sure that the company was financially solvent. Atari had other divisions but I was not sure how the company as a whole was doing then. From my perspective, the company shelled out $1 million for the licence and I never feared for my job so I just felt everything was in fine shape. I was so busy with trying to make this game a success; I was blinded as to the decline in videogame sales for the year. I do remember feeling bad for our workers in the production building though. If we did not have product for them to build then they did not have a job for a while. I felt somewhat responsible for making sure I did what I could during my career to keep the factory running at all costs."

Despite being released during one of videogaming's bleakest times, *Star Wars* was an immediate success and instantly became the number one selling arcade game, although sadly, this success was short-lived due to *Dragon's Lair* getting released two weeks later. Nevertheless, all the hard work, effort and cost was worth it, with over 15,000 machines being sold for a grand total of $15 million, not bad at all for a period that Jed and the rest of Atari described as 'going supernova'. Indeed, Jed is adamant that *Star Wars*' success was the main reason why the arcade division wasn't shut down that year and it wasn't until the end of 1983 that the team discovered that Atari Games had barely broken even, and that had included the $15 million generated by *Star Wars*.

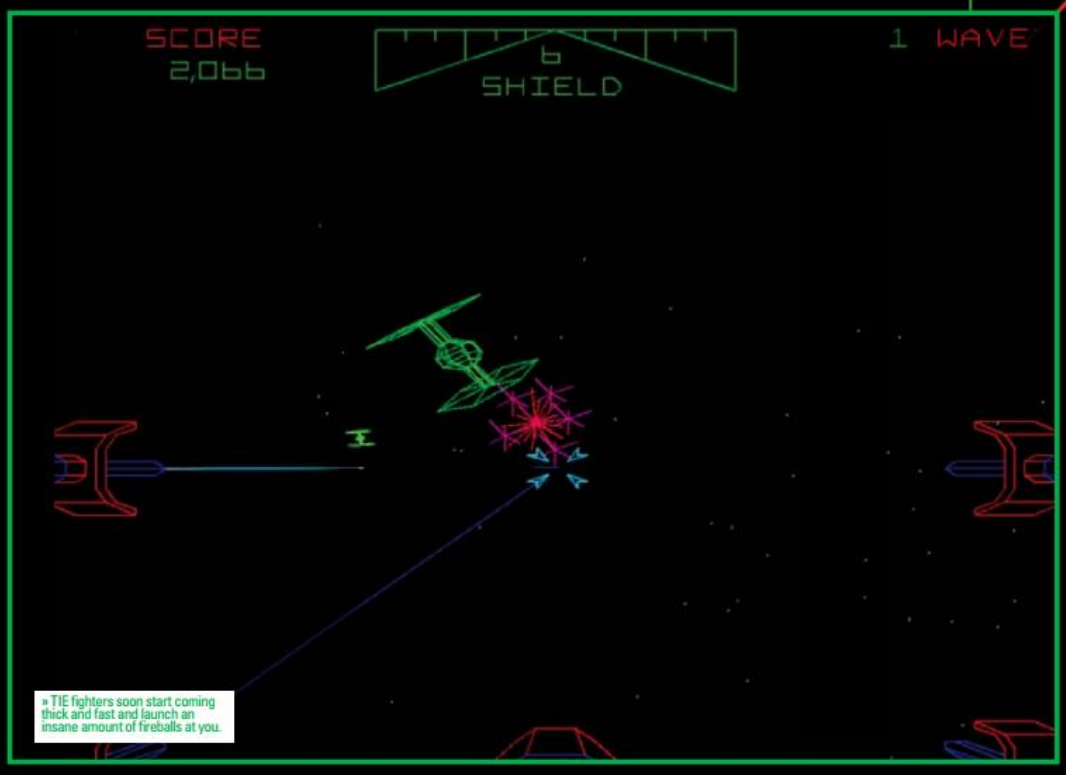
After proving to be such a huge hit in the arcades it was hardly surprising when Domark announced that it would be bringing the game to home computers in 1987. Despite a four-year wait, and fairly inferior hardware, the 8-bit machines of the time did a pretty good job of capturing the spirit of the arcade original, and while the Amiga and Atari ST versions were easily the most impressive, special mention must also go to the rather excellent home port that appeared on the ColecoVision. While the home versions sold very well, Mike and the rest of the team had no involvement with them and even less time to actually play them.

"The thing about being a part of a game development team is that once you finish one game, you just roll right into the next one," explains Mike. "In the case of *Star Wars*, Atari did a great job in licensing our game to many different home game platforms and if I'm honest I remember getting royalty cheques from them more than remembering which company did what kind of job with our finished game. Atari would always give me a certain number of copies of these games though to give out to team members, which I thought was a class move and a nice motivator."

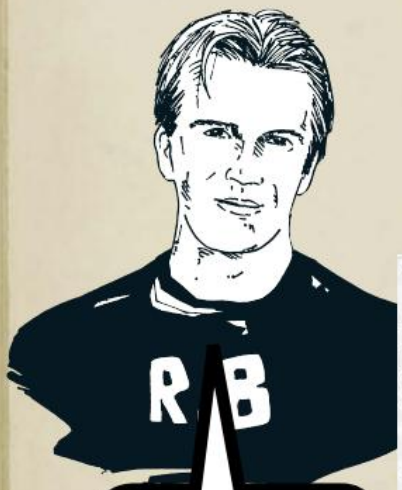
Although it was followed by two sequels – one with vectors, the later with sprites, which actually came out between the two vector games – neither of them ignite quite the same feelings as their superior predecessor and it's a testament to the game's brilliance and success that it's the only arcade machine we actually happen to have in the office. *Star Wars*, perhaps more than any other licence of the era, was able to offer you an immersion and atmosphere that was second to none, and it's the feeling of actually being within the film that to us, makes it so special.

"*Star Wars* captured the essence of one of the greatest properties ever created for the big screen and beyond," agrees Mike. "It allowed someone to become Luke Skywalker and play an interactive role just like what people viewed on the big screen. It had just the right mix of all the elements it takes to make a winner… For me, it's a true timeless piece of history and art."

"IT HAD THE RIGHT MIX OF ALL THE ELEMENTS IT TAKES TO MAKE A WINNER"
MIKE ON WHY STAR WARS WAS A SUCCESS



» TIE fighters soon start coming thick and fast and launch an insane amount of fireballs at you.



June 1983 – a time of shows, fairs and computing events. Every weekend had something new for gamers to attend. A great time to see sneak previews of forthcoming hardware and software and, unwittingly, build up your software-house branded carrier-bag collection...

THE LATEST NEWS FROM JUNE 1983

ZX MICROFAIR
THERE'S ROOM FOR EVERYONE AT THE BIGGEST ZX MICROFAIR OF ALL TIME!
CUT OUT AND KEEP
HOW TO GET TO THE BIG SHOW.
Come to the big one...
7th ZX MICROFAIR

» The seventh ZX Micro Fair was such a resounding success the next one was booked for August. Ah, the good old days...

The seventh ZX Microfair at Alexandra Palace in London kicked things off on the 4 June with, predominantly, a mass of software houses showing off their wares to the drooling public. With the previous few months not having been particularly rich in new releases, companies were choosing to keep their powder dry in readiness for the hugely anticipated shows.

The Microfair didn't disappoint, with the vast majority of the 140 exhibitors being games producers. The software boom was kicking in and everyone had something they wanted to foist upon the casual bystander. With attendance figures of over 8,000 for the one-day show, there was certainly plenty of scope to relieve passers-by of their hard-earned cash.

While the usual suspects were in attendance, such as Sinclair, Bug-Byte and Quicksilva, there were also a large proportion of first time exhibitors including Vortex Software who was showing off its first two releases, *Gun Law* and *Android One: Reactor Run* – the latter by Costa Panayi. Other

» *Android One* (Spectrum): Costa Panayi launched his Vortex career with this classic and followed it up with *TLL* & *Highway Encounter*.

debutants included DK'Tronics showing *Gold Mine*, Artic Computing revealed 3D *Quadracube* and *Cosmic Debris*, while a small independent software house going by the name of Abbex released a utility, titled Super Talk, which created speech on the Spectrum.

Although the program was fairly average, the programmer certainly was not. This was the first commercial release by Dr David Aubrey Jones who later went on to produce massive selling classics such as *Ghostbusters* and *H.E.R.O.* for Activision and *Mercenary* for Novagen Software.

Computing rivals, Commodore, also had a major event running with the International Commodore Computer Show at the Cunard Hotel in London from 9-11 June. With over 70 exhibitors and a healthy 16,500 visitors, the show was a raging success and promised much for the future of the new (ish) C64, which was the centre of attention for most of the attendees during the three-day event.

» *Hustler* (C64): The Bubble Bus pool game got its first airing at the International Commodore Computer Show. Sink the pink!

» Acres of floor space, lots of promise but, ultimately, not enough visitors. Too many shows spoil the broth or something...

Smaller companies such as Llamasoft, Bubble Bus and Interceptor Micros also had a presence with previews of their forthcoming titles; *Attack Of The Mutant Camels*, *Hustler* and *Krazy Kong* respectively. Commodore also revealed several new games released on ROM cartridge format including *International Soccer* and *Jupiter Lander*.

The Earls Court Computer Fair opened it's doors from 16-19 June with the lure of actually being able to see the long-awaited and much anticipated holy

» Despite a shaky outlook for the computing giants, Atari still managed to release four new computers at the Consumer Electronics Show in the USA.

grail of Spectrum data storage, the Sinclair Microdrive, in the flesh/plastic.

When the doors did open not only did the storage system not appear, neither did the crowds or the exhibitors. With so many shows based in London in the space of a few weeks, maybe apathy had set in with the computing public. The previous year's show had pulled in crowds of around 38,000 people, so the organisers of this show trebled the available floor space. Unfortunately, the extra space made the lack of attendees even more obvious.

There were some notable unveilings to be seen however. Amongst the new machines making debuts at the show were the Camputers Lynx, Memotech MTX500 and, the immensely forgettable, Laser 200 Colour Computer.

In the good old US of A, the annual Consumer Electronics Show was being held in Chicago from the 5-11 June. With the usual array of big-hitters such as Atari and Commodore in attendance it was interesting and slightly unusual to see that several UK computer manufacturers had infiltrated the show.

Dragon introduced America to its Dragon 32 machine following a licensing tie-up with Tano. Sinclair machines would be represented by US distributor Timex, who highlighted three new machines, all differing wildly from the conventional Sinclair machines. The new Timex trio were the TS2048, TS2068 and TS1500. The 2000 series included such luxuries as ROM slots and enhanced sound along with a more responsive keyboard. The TS1500 was a 2K version of the ZX81 but was built more robustly, in a similar vein to the Spectrum, and had a price tag of just $29.

Even Acorn wanted a piece of the American computing pie by unleashing the old BBC machine on an unsuspecting and, generally, unresponsive cheeseburger-munching public.

Other interesting curios on show at the CES included a keyboard add-on from CBS Electronics for the ColecoVision games console. It also went on to unveil the ColecoVision Adam system, a complete set-up for $600 that included a detachable keyboard, a printer, joysticks and a microdrive-like storage system, which caught many an admiring eye while at the show.

» It's new, it's white and has a keyboard the same colour as a Caramac bar, the newly released Laser 200 computer.

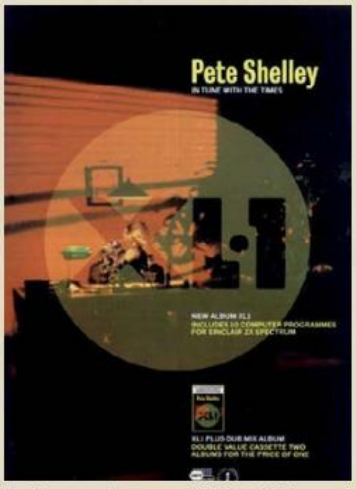
» ColecoVision's budget-priced package of computer, printer and various peripherals was warmly received yet didn't set store tills ablaze.

Atari, still struggling with financial problems, threw caution to the wind by releasing four new computers; the 600XL and 800XL, essentially the same but the 800XL having a 64K memory, and the 1400XL and 1450XL which both featured 64K RAM and a built-in modem.

Back in the UK, there was good news for Clive Sinclair, in the form of a knighthood in the Queen's Birthday Honours List. He celebrated the surprise award by revealing two of his research projects. He was already exploring the world of flat screen TV and its potential uses but was also investigating the possibility of producing an electric car. However, the first prototype Sinclair car designs would not be made public for at least 18 months, so no plans were fixed as yet. Sadly, there would be tears before bedtime...

Commodore initiated the start of its battle to win over UK computer users with severe price-slashing of its C64 machine. To bring it into the same price structure as other machines, it was announced that the price would be lowered from around £350 to just under £200. The future for Commodore's old faithful, the Vic-20, looked to be uncertain…

An unusual software release this month saw the vinyl album, *XL1* by Pete Shelley, one of the founders of the Buzzcocks, featured a track, which could be loaded onto a Spectrum. The program played in sync with the music tracks, supplying


Pete Shelley
IN TUNE WITH THE TIMES
NEW ALBUM XL1
INCLUDES 10 COMPUTER PROGRAMMES FOR SINCLAIR ZX SPECTRUM
XL1 PLUS DUB MIX ALBUM
DOUBLE VALUE CASSETTE TWO ALBUMS FOR THE PRICE OF ONE

» The album came with a program offering you a Windows Media Player experience for the ZX Spectrum era. Good idea, poorly implemented.

WHAT THE MAGAZINES WERE SAYING...

Personal Computer News

PCN continued its foray into strange and wonderful machines by reviewing the Comx 35. Inside it concentrated on the mainstream with a pull-out feature on the various ways of building a better Sinclair Spectrum system with the multitude of add-ons and peripherals that were available at the time.

BBC Micro User

With Sinclair, Commodore and a variety of other multi-format computer shows occurring throughout June, the BBC Micro User Show in Manchester was one that may have slipped under your radar. A three-day extravaganza of all things Acorn, the show was set to run from 24-26 June.

Sinclair User

With the recent news that Sinclair was driving the current wave of pricing discounts on machines, making the 16K Spectrum the first colour computer in the UK priced under £100, it came as no surprise to see the new baldy knight of the realm splashing some eye-catching advertisements around the computing press to accentuate the cuts.

CHARTS

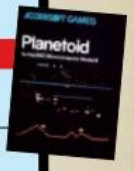
JUNE 1983

VIC-20

1. Cosmiads (Bug Byte)
2. Jelly Monsters (Commodore)
3. Vic Panic (Bug Byte)
4. Choplifter (Creative Software)
5. Skramble (Rabbit Software)

SPECTRUM

1. The Hobbit (Melbourne House)
2. Arcadia (Imagine)
3. Penetrator (Melbourne House)
4. Time Gate (Quicksilva)
5. Flight Simulation (Psion/Sinclair)

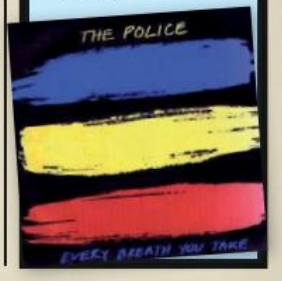


BBC

1. Planetoid (Acornsoft)
2. Rocket Raid (Acornsoft)
3. Snapper (Acornsoft)
4. Arcadians (Acornsoft)
5. Great Britain Ltd (Simon W Hessel Software)

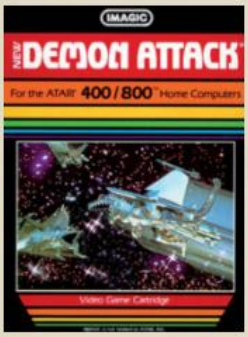
MUSIC SINGLES CHART JUNE '83

1. Every Breath You Take (Police)
2. Bad Boys (Wham!)
3. Nobody's Diary (Yazoo)
4. Buffalo Soldier (Bob Marley & The Wailers)
5. China Girl (David Bowie)



» The first UK tape based magazine. If you can read this, your tape is missing. Go and ask your newsagent.

» *Knot In 3D* (Spectrum): Looking at the screenshot you could be forgiven for thinking it was a Channel 4 logo generating program.



» *Demon Attack* (Atari 400/800): Imagic covert their Atari-annoying *Phoenix*-like game on… the Atari home computers. Have it my son!

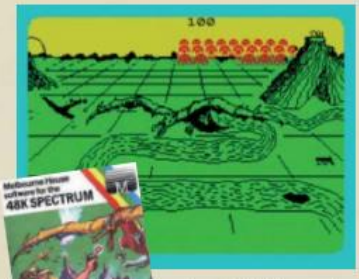
visualisations and lyrics to the album. Unfortunately the finished product looked like something that was excluded from the *Horizons* tape for being a bit too rubbish.

Spectrum Computing, a new tape-based magazine, got its first public airing this month. Available via mail order through Argus Specialist Publications it cost £2.99 and was the first commercially available tape-based magazine of its type in the UK. It did rather well over the coming months and it wasn't long before the formula was applied to other formats.

Liverpool, already awash with software houses large and small, could add yet another one to the list. New company, Lyversoft, released its first batch of games, all for the Commodore Vic-20 although other systems would be catered for in the future. Amongst its first releases were *Apple Bug*, *Demon Driver*, *Lunar Rescue* and *Space Assault*.

Demon Attack by Imagic, the Atari 2600 game that ruffled Atari's feathers for being vaguely similar to one of its unreleased games, got the conversion treatment with imminent releases on the Vic-20 and Atari 400/800 systems. That news probably cheered up Atari up no end…

» *Jet Pac* (Spectrum): Ultimate's first computer game and its arcade knowledge from earlier days was already noticeable in the excellent *Jet Pac*.



» *Terror-Daktil 4D* (Spectrum): Basically *Space Invaders* aided by swooping pterodactyls. Okay graphics but not a great game.

NEWS

JUNE 1983

On 9 June, Margaret Thatcher, dubbed the Iron Lady, won her second General Election with a landslide victory over Labour with 397 seats against 209. The newly formed SDP, run by co-leaders David Owen and David Steel, managed to gain only 24 seats in their very first election.

Space news was abounds starting with Sally Kristen Ride, who became the first US woman to go into space. She was part of the crew on the seventh Space Shuttle mission which took off from Florida on 18 June, spending six days in space.

Staying in space, 13 June saw Pioneer 10 become the first manmade object to leave our solar system passing through the orbit of the outermost planet, Pluto (still a planet in those days). Launched in 1972, its mission finally came to an end in 1997 although it kept sending out signals up until January 2003.

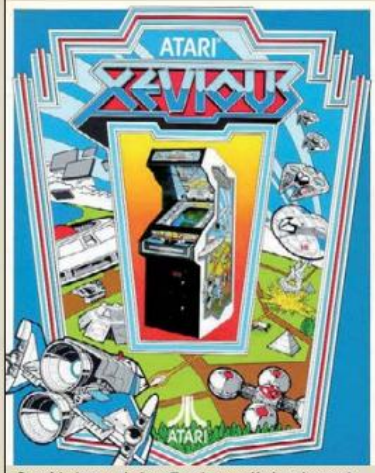
June was a good month for movies with *War Games* premiering in the USA on 3 June, *Trading Places* on 8 June and *Superman III* on the 17. The UK had the magical eyebrow twitcher, Roger Moore playing James Bond, premiering in *Octopussy* in the UK on 6 June. Shplendid Mish Moneypenny… ah, wrong 007…

» On its journey through the solar system, Pioneer 10 got close to Jupiter and the rings around Uranus.

Malcolm Evans of New Generation Software announced that his latest creation, the mildly strange *Knot In 3D*, was ready to hit the shops and, after a recent run of quality gaming releases, such as *The Hobbit*, *Penetrator* and Horace Goes Skiing (sort of…) Melbourne House released *Terror-Daktil 4D* for the Spectrum.

The latest reviews from the latest issues of the magazines of the time included a couple of classics and a lot of mediocrity. Maybe all the previews copies were at all the shows rather than in staff writer's sweaty joystick-mangled hands?

Computer & Video Games reviewed *Powerboat Race* (Futura Software, BBC), *Roman Empire* (Lothlorien, Spectrum), *Qix* (Atari, Atari), *Blind Alley* (Sunshine Software, Spectrum) and had a brief look at a new arcade game called *Xevious*.



» One of the best vertical scrolling shooters, *Xevious*, the arcade game, gets previewed in the *C&VG* June '83 issue.

» *Jawz* (Spectrum): Elfin's *Jawz* was a bit like underwater *Space Invaders*, with sharks, jelly fish and a big gun.

Sinclair User took a look at the fantastically titled *Dr Bongo's Safari Park* (Custom Software), *Cyber Rats* and *Muncher* (both Silversoft), *Crevasse/Hotfot* (Microsphere) and the less than impressive, *Embassy Siege* (ICL/Sinclair).

Readers of *BBC Micro User* had very little in the way of games reviews with *Great Britain Limited* and *Inheritance* (both Simon W Hessel Software) and *Countdown To Doom* (Acornsoft), as the choices for their potential gaming pleasure.

Home Computing Weekly highlighted a varied platter of titles including *Wacky Waiters* (Imagine, Vic-20), *Xeno II* (Anirog, Vic-20), *Jawz* (Elfin Software, Spectrum), *Froggy* (DJL Software, Spectrum), *Atom Smasher* (Romik, Vic-20) and *The Black Hole* (Quest, Spectrum).

They also featured one of the first reviews of *Jet Pac* for the Spectrum, the first game from new software house, Ultimate: Play The Game. Needless to say, it rated very highly…

THE LATEST NEWS FROM JULY 1983

July 1983 – the MSX invasion gathers pace, the Famicom arrives in Japan, Atari gets supercharged, Rignall reigns supreme, Crash is born, the Sinclair Microdrive gets a release date and Ultimate bakes off a damn fine Cookie.

» With a swathe of companies producing an array of compatible machines, would the Japanese machines conquer the UK computer market?

The first inklings that the big Japanese electronics producers might be preparing to invade the UK with a range of compatible systems began to filter through to the media with news that companies such as Sony and Toshiba had subscribed to a new computer standard as defined by American software giant, Microsoft.

The MSX format, which would cover both software and hardware ranges, would feature several different machines produced by a number of companies (as many as 16 were initially involved) with a view to producing high-specification, low-priced systems that were all completely compatible with each other. Software would be interchangeable between each machine, with titles being made available on cassette, disk and ROM cartridge formats.

With the development know-how and financial muscle behind these huge Japanese companies, the MSX, at that time, was seen as a very real threat to virtually all UK home-bred systems. The MSX format would later be advertised as 'the format of the future'. Only time would tell if the Japanese computer invasion was going to be a successful one.

Not such a big threat but another new Japanese arrival to the UK computing world was the Sharp MZ700. The computer would cost a smidge under £250.

» Nintendo released the Famicom onto the Japanese gaming world (NES to follow, Westerners!) and we never looked back...

In Japan itself, 15 July saw the release of a new console by Nintendo: the Famicom – shortened from 'Family Computer'. There were three games available at launch: *Donkey Kong, Popeye* and *Donkey Kong Jnr.*

Although not an immediate success, due mainly to a product recall, once the teething problems were rectified the new console sold by the container load, reportedly shifting 500,000 units in the first two months.

It took a further two years for the US equivalent, the NES, to reach American shores and another year to finally become available in Europe.

The newly crowned Video Arcade Game Champion for 1983 was an 18-year-old urchin going by the name of Julian Rignall. The competition, organised by Computer & Video Games magazine, saw over 500 of the country's sweaty-fisted button-pounding joystick manipulators battling it out with one eye on the title and the other firmly fixed on the new arcade machine they would receive as champion.

The initial heats, played over several months, saw six games chosen for the competition with the best three scores on each machine meeting in the London-based final. The six best scorers on each machine on the day then progressed to the final showdown – a play-off on a brand new, as of then, unreleased game called *Gyruss* by Taitel.

Julian qualified for the final with an impressively thumb-numbing score of 5,248,520 on *Defender* and then narrowly won the *Gyruss* contest with a score of 73,100. Quite what became of the fresh-faced gaming wizard no-one quite knows...

With fewer actual sightings than a Microdrive-shaped UFO being piloted by a Yeti wearing Nordic slippers, the fabled, almost mythical, Sinclair storage system finally, it was reported, would be available via mail order and in certain stores by early August.

Many an eyebrow was arched with scepticism as the enigmatic device of black plasticness had suffered multiple false starts and delays since the prototype design was first seen in April 1982. Everyone waits...

A brand new software mail order company was accepting catalogue requests and orders for the first time this month. The three partners, Roger Kean, Franco Frey and his

» Franco Frey and Roger Kean do battle with one of Oliver Frey's monsters in this Crash promotional picture.

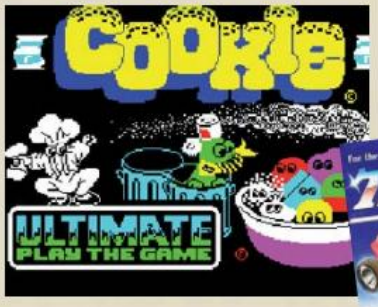
» *Pssst* (Spectrum): Did you get *Pssst*? If not, you should have. Ultimate's second game was a colourful offering and also very playable.

brother Oliver Frey, set up Crash Micro Games Action, which planned to initially sell Spectrum games through its new software catalogue, with other formats being catered for should the venture take off.

Of course, Crash Micro Games Action did take off in spectacular fashion when their catalogue eventually morphed into the Spectrum gamesters' bible. After two editions of their software catalogue, the first newsstand issue of Crash magazine was finally released onto the shelves of John Menzies in February 1984. The Newsfield Publications empire was born...

Bug Byte Software had been working overtime again, announcing several new games ready for release on the BBC and Spectrum. The Beeb got *Sea Lord*, *Oblivion* and *Old Father Time* whilst the Spectrum received *Aquarius* and *Styx*. The latter was written by Bug Byte's new boy and resident scruff-bag, Matthew Smith. The company also hinted that he was extremely close to completing work on an exciting new treasure-gathering platform game for the Spectrum entitled *Manic Miner*. Should be good...

With the huge success enjoyed by *Jet Pac* and the favourable reaction to *Pssst*, Ultimate Play The Game revealed its next two titles to the Spectrum gaming population.



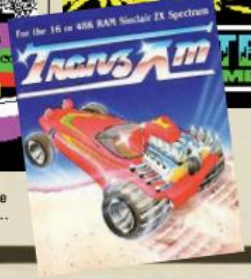
» The impending release from Ultimate looked set to continue the company's impressive debut. Just wait for *Sabre Wulf*...

» The Supercharger was a cunning little device that expanded your Atari 2600 and its gaming capabilities. Looked a bit like 8-track cartridge though.

Surprisingly for a newly formed company, Ultimate had rapidly gained such a reputation for producing high-quality software that its next two titles, *Cookie* and *Tranz Am*, were already being eagerly awaited by Spectrum owners.

An ingenious little add-on for the Atari 2600 arrived with a whimper rather than a fanfare, mainly due to receiving minimal coverage of its release. A real pity, as the Starpath Supercharger was a natty expansion module which upped the Atari's RAM from just 128 bytes to a mind-blowing 6272 bytes. With this extra bit of oomph, games producers could create faster games with higher-resolution graphics. The Supercharger was an oddity in as much as it was an expansion module that turned the cartridge-based Atari into a tape-based software machine. The Supercharger connected to a standard tape deck via a cable to the earphone socket. Several Supercharger games had already been created and were standing by for release, including *Phasor Patrol*, which came free with the module, and the imaginatively titled *Communist Mutants From Space*. The Supercharger would set you back £39.95 while the cassette-based games would be priced at £19.95 each.

The ongoing palaver with the Atari copyright court case concerning

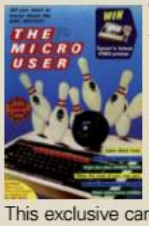


» Another new Ultimate release this month was *Tranz Am* for the Spectrum. Thankfully David Hasselhoff is nowhere to be seen...

WHAT THE MAGAZINES WERE SAYING...

Computer & Video Games

C&VG's regular arcade feature focused on how the Americans love to set every arcade high score record going and listed many of feats. No doubt some of those obscenely massive scores have stood the test of time and still remain valid today. Maybe we should've sent new C&VG arcade champion Julian Rignall to sort them out...



The Micro User

The Acorn-dedicated magazine turned its news page into a tabloid-newspaper-style layout leading with a story reporting that Bug Byte Software had disbanded. This exclusive came from Kansas (the software house not US state) whose insider revealed the source of this stunner, stating, "I'm sure I read it in a magazine." Excellent work sir.

Sinclair User

Sinclair User continued its 'User of the Month' feature highlighting another mildly eccentric individual and what they use their machine for. This month, Mrs Sims talked about her ZX81 and the potential for using it with knitting and embroidery patterns. NO!, ditch the wool and play *3D Monster Maze*... knitting patterns indeed...

CHARTS

JULY 1983

VIC-20

1. Asteroids (Bug Byte)
2. Panic (Bug Byte)
3. Arcadia (Imagine)
4. Wacky Waiters (Imagine)
5. Cosmiads (Bug Byte)

SPECTRUM

1. Jet Pac (Ultimate)
2. Penetrator (Melbourne House)
3. The Hobbit (Melbourne House)
4. Flight Simulation (Psion/Sinclair)
5. Transylvanian Tower (Richard Shepherd)

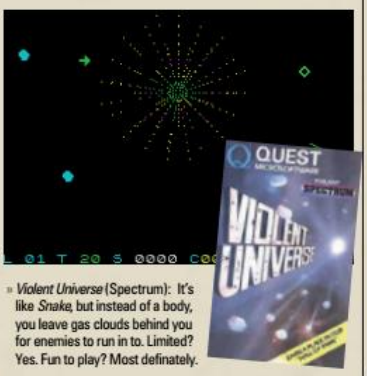
ZX81

1. Football Manager (Addictive Games)
2. Flight Simulation (Sinclair/Psion)
3. Fantasy Games (Sinclair/Psion)
4. Defender (Quicksilva)
5. 1K Games (Artic)

MUSIC SINGLES CHART JULY '83

1. Baby Jane (Rod Stewart)
2. Wherever I Lay My Hat (Paul Young)
3. I.O.U. (Freeez)
4. Moonlight Shadow (Mike Oldfield)
5. Flashdance... What A Feeling (Irene Cara)

» If you can beat them, cheat them. The Coleco Gemini, the first of several cloned Atari 2600 machines entering the marketplace.



» *Violent Universe* (Spectrum): It's like *Snake*, but instead of a body, you leave gas clouds behind you for enemies to run in to. Limited? Yes. Fun to play? Most definately.

» *Communist Mutants From Space* (Atari 2600): one of the new games for the Starpath Supercharger expansion module for the old Atari woody.

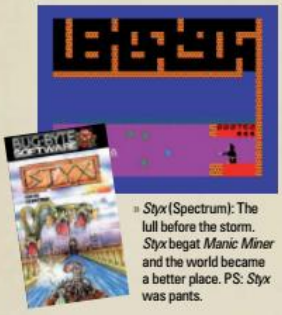
Imagic's *Demon Attack* game and how it looked vaguely like one of Atari's, thus far, unreleased efforts, finally came to a conclusion when both sides decided to settle out of court.

Atari fared little better with the lawsuit it had served against Coleco and its Atari Expansion Module which allowed VCS games to be played on its Colecovision machine. Coleco prevailed, being judged not to have infringed any valid patents. Just to rub it in, Coleco later released a direct clone of the Atari 2600, the Coleco Gemini. There's nothing quite like flicking the V's at your commercial adversaries after a particularly acrimonious court case…

Coleco was celebrating again with news that the Coleco Adam computer, a complete set-up comprising an 80K system, disk drives, printer, keyboard and software for around £400, had sold out even before production had started. With advance orders of 500,000 the Adam looks to be a massive success even before release. Production was to begin in the USA in August with a debut in the UK pencilled in for around October.

The magazine review sections were quieter than usual with the usual software summer lull kicking in. What was noticeable was that the older systems, such as the ZX81, were still getting a steady flow of new software, with the less popular systems getting a look-in too…

Over at Computer & Video Games magazine, the reviewers cast an unassuming eye over several games including *JetPac* (Spectrum, Ultimate), *Mined Out* (Dragon 32, Quicksilva), *Blade Of Blackpoole* (Atari 800, Calisto), *City Defence* (Dragon 32, Shard Software) and the wonderful *Parsec* (TI99/4a, Texas Instruments). Alert! Alien craft advancing…



» *Styx* (Spectrum): The lull before the storm. *Styx* begat *Manic Miner* and the world became a better place. PS: *Styx* was pants.

» If the impending wave of MSX-ness didn't grab you, there was the Sharp MZ700 with built-in toilet roll dispenser, as an alternative.

Sinclair User, in contrast, had a rather bland selection of reviews featuring games such as *Monte Carlo* (Spectrum, Micromega), *Knight's Quest* (Spectrum, Phipps Associates) and *Tempest* (Mikro-Gen, ZX81).

Home Computing Weekly covered slightly more stimulating games in the form of *Pssst* (Spectrum, Ultimate), *Robon* (Spectrum, Softek), *Pakacuda* (Rabbit Software, Vic-20), *Cosmic Firebirds* (Solar Software, Vic-20), *Zombies & Potholes* (Jupiter Ace, Jupiter Cantab), *Invaders* (Oric-1, Arcadia) and *Frog Run* (C64, Anirog).

Popular Computing Weekly impressively weighed in with write-ups for new releases covering almost every conceivable machine available, with 13 different systems getting software coverage.

Amongst the gaming diversity on offer was *Violent Universe* (Spectrum, Quest Microsoftware), *Monster Mine* (Lynx 48K, Gem Software), *Doomed* (Sharp MZ80, Solo Software), *Forensic* (BBC, Worm Software), *Franklin's Tomb* (Dragon 32, Salamander), *Kaktus* (C64, Supersoft), *Oric Trek* (Oric-1, Salamander), *Fruitee Nudge* (Colour Genie, NCG), *Zen* (Newbrain, Kuma Computers), *Star Trek* (Jupiter Ace, Ravensoft), *Escape From Perilous* (Atari 400/800, English Software), *Moonlander* (ZX81, Orion) and *Invaders From Outer Space* (Vic-20, Swift Software).

If only someone had released a game for the green-screened retina-scorcher that was the Research Machines 380Z…

NEWS

JULY 1983

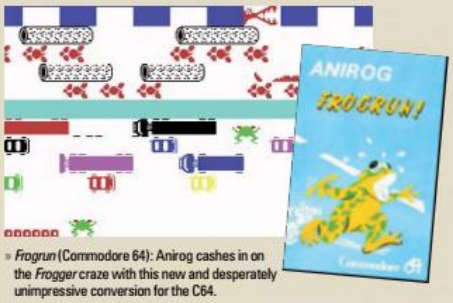
On 21 July, a record low temperature was recorded at Vostok, a Soviet research station in Antarctica. Armed with a platinum thermometer, 34 pairs of thermal undergarments and a steaming cup of Bovril, station superintendent Arnold Budretsky recorded a temperature of -128.6 Fahrenheit or -89.2 Celsius. Not a day to be wearing flip-flops and hanky hats…

16 July saw Britain's worst helicopter crash. A Sikorsky S-61 crashed into the sea as it was approaching the Isles of Scilly off the coast of Cornwall. The pilots lost their bearings and flew into the sea. A total of 20 people were killed although both pilots survived.

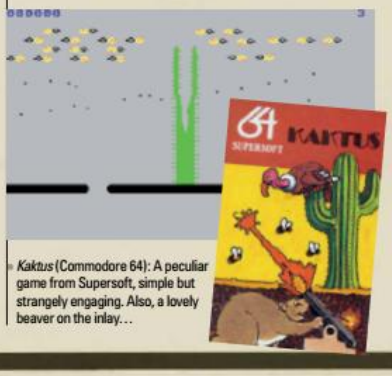
Actor and moustachioed actor/gentleman, David Niven, died on 29 July aged 73. Aside from winning a Best Actor award at the 1959 Oscars, he is probably most fondly remembered for playing the quintessential English spy, James Bond, in the 1967 spoof movie, *Casino Royale*.

In movieland, *Staying Alive*, the sequel to *Saturday Night Fever* and, rather strangely, written and directed by one Sylvester Stallone, deposes *Return Of The Jedi* as the number one movie in America. However, it only managed a solitary week at the top before being ousted by the unintentionally hilarious gag-fest that was *Jaws 3D*.

» A record low temperature in Antarctica led to outbreaks of fish fingers and Zoom lollies roaming free…



» *Frogrun* (Commodore 64): Anirog cashes in on the *Frogger* craze with this new and desperately unimpressive conversion for the C64.



» *Kaktus* (Commodore 64): A peculiar game from Supersoft, simple but strangely engaging. Also, a lovely beaver on the inlay…

The Budget BBC

An Acorn Electron Retrospective

They say mighty oaks grow from little acorns but in the case of the Electron, it was the other way around. David Crookes talks to Acorn's tech genius Steve Furber and its co-founder Christopher Curry about the budget version of the BBC Micro

When tasked with creating the Acorn Electron, the team weren't too keen on the task. "We didn't want to do it," says Steve Furber. "I recall the technical team was not enthusiastic about it." But the idea was out there and Christopher Curry, who co-founded Acorn Computers alongside Hermann Hauser and Andy Hopper, was not backing down.

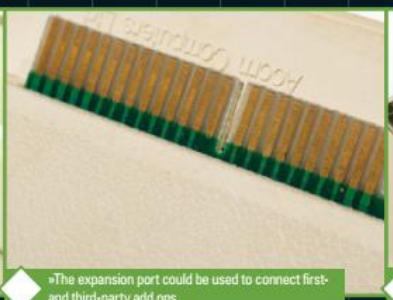
Acorn wanted the technical crew to produce a budget version of the BBC Micro Model B to penetrate the newly emerging and popular low-end of the market. The Electron was to be half the size of the computer that was making great waves in schools and it was geared towards parents who wanted to buy a recognisable, seemingly educational computer at a more affordable price.

"I also think Chris in particular was keen to try and eat a bit more of Clive Sinclair by attempting to move Acorn down into the section of the ZX Spectrum," Steve adds. "But our sense was that the right direction for Acorn was to go upwards and onwards rather than downwards and backwards."

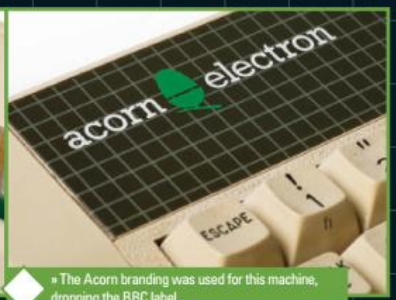
It was 1982 and Sinclair had been making a huge impact on the computer market. The ZX81 cost £69.95 fully built (£20 less as a kit) and it was shifting 40,000 units each month. The ZX Spectrum had just been unveiled and its price was set at a fair £125 for the 16KB model and £175 for the 48KB. Acorn's BBC Micro Model B was £400 but while it went on to sell 1.5 million, Chris felt his company was set to miss a vital budget-end marketplace.

There was also some fierce rivalry to address. Chris had worked for Sinclair for 13 years but, following an argument, he jumped ship and jointly set up Cambridge Processor Unit Limited in December 1978. Three months later, Acorn ▶

» Connect away to a colour or black-and-white TV, monitor and tape recorder.

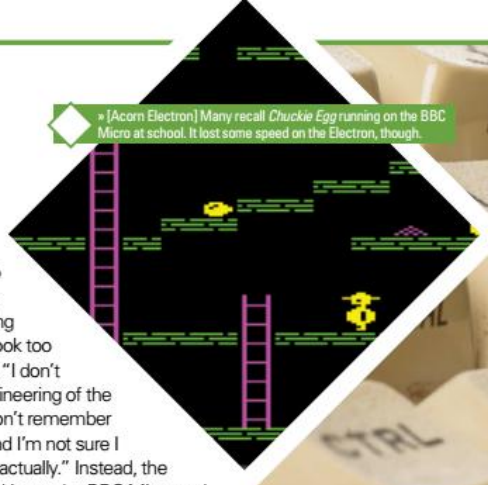


»The expansion port could be used to connect first- and third-party add ons.



» The Acorn branding was used for this machine, dropping the BBC label.

"Our sense was that the right direction for Acorn was to go onwards, rather than backwards"



» [Acorn Electron] Many recall *Chuckie Egg* running on the BBC Micro at school. It lost some speed on the Electron, though.

Computers was born, debuting with the well-received System 1 machine which had helped Acorn gain enough kudos to win its fight against Sinclair over the lucrative rights to produce computers for the BBC.

By producing a stripped down and cheaper version of the Electron, Acorn believed it was able to achieve two things: a foothold in a strong, emerging sector of the market, and another finger in the eye of Sir Clive. "I have no regrets," Chris tells us. "We needed something that could be priced near enough to compete with the main competition, the Spectrum. We had to take away a lot of the frills that were built into the BBC Micro, call it an Acorn product so that we didn't have to pay royalties to the BBC and have freedom over the prices. We also had to produce something that would be extendable beyond the BBC Micro. And that's what we did. We looked into producing a future-proof product."

The Electron was effectively an attack on the Spectrum line but it was also pitched as a rival to the Oric and Dragon computers. "It will have a massive impact on the sales of these machines," Chris told *Acorn User* magazine. Yet there were misgivings. "There was a feeling that we should stay superior and above the marketplace," Chris tells us. "But the [budget end] was a big marketplace. We were faced with a technical challenge but it was an interesting one. We ended up with a terrific product."

Given the intention was to primarily blow the Spectrum out of the water, it is surprising that the design team didn't look too closely at Sinclair's machine. "I don't think we did any reverse engineering of the Spectrum," says Steve. "I don't remember taking the Spectrum apart and I'm not sure I ever touched the Spectrum, actually." Instead, the process was about solely looking at the BBC Micro and slashing the number of chips in the machine.

Rather than have 102 as in the Micro, Furber and the team were able to get the Electron down to around a dozen including a 6502A microprocessor running at 2Mhz, two 16k memory chips, four RAM chips, nine simple TTL chips, a quad-operational amplifier chip and – most importantly – a single Uncommitted Logic Array (ULA) chip which attempted to take on board all of the key functionality of the ones that were being axed. This essentially created a system on a chip and it allowed the Electron to be placed in a box that was far smaller than the Micro. "We had to do much heavier integration on the ULA," says Steve. "But there were various other things we did specifically for cost reduction that compromised performance a bit."

» There were 10 user-definable function keys but no red ones.

ELECTRON VS MICRO

How the Electron shapes up to its counterpart

SLOW SPEEDS

■ The Electron had the same CPU but the system was up to 40 per cent slower than the BBC. The ROM was accessed at faster speeds than the RAM. Each byte had to be fetched twice.

NO MODE 7

■ Mode 7 was used for Teletext and it allowed for double height and flashing characters, taking up 1KB of memory. The Electron didn't have it since the designers had chopped the SAA505 chip.

NO 6845 CRTC CHIP

■ The BBC's graphics were controlled by the 6845 CRTC plus a video ULA to provide the colour palette. The Electron's ULA combined these chips. It meant sideways scrolling in games was not instantly available on the Electron.

ONE SOUND CHANNEL

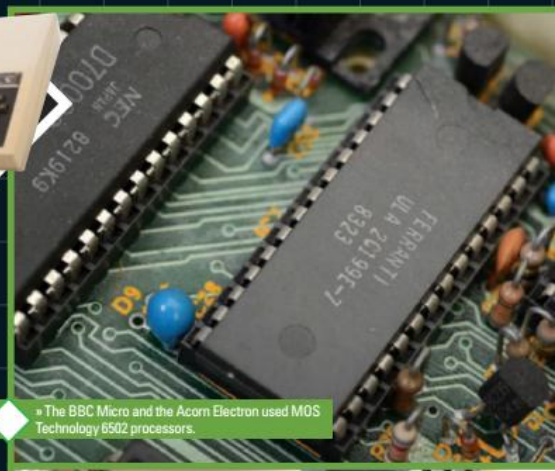
■ The sound channels of the Micro were turned into three virtual ones that were then incorporated into a single physical channel on the Electron. It meant the Micro-style of music was not possible on the cut-down machine.

HARDWARE INCOMPATIBILITY

■ If a program was hardware-specific and tried to access aspects of the BBC Micro, then it would not run properly on a bare Electron because of the integration of so many chips into the single ULA.

SLICKER KEYBOARD

■ The Electron had the most efficient of the two computer keyboards. With 56 keys – 18 fewer than the BBC Micro – it most noticeably did away with the physical red function keys and allowed user-definable function keys instead.



» The BBC Micro and the Acorn Electron used MOS Technology 6502 processors.

» Beneath the BBC keyboard were expansion ROM slots. The Electron had two additional ROM slots.

> **"We needed something that could be priced near enough to compete with the main competition, the Spectrum"**
>
> Christopher Curry

It was a tough ask and the team began to struggle. The graphics of the Electron and Micro were set to be the same by and large but one problem that had to be overcome was an issue with the video ULA. "It was a major concern," says Steve, pointing to the difficulties in pushing the video ULA to the limits by running it at 16MHz in order to gain a 640x256 resolution in Mode 0. "We had been extremely careful when we designed that bit of the Electron ULA but we still had some display break-up problems, and I had quite a long wrangle with Ferranti over what the cause of these was and what the appropriate fix would be," Steve explains.

Ferranti assumed the design wasn't right; that the Acorn team hadn't designed it fully to its specification. But while that was an accusation that could easily have been levelled at the BBC Micro video processor ("it was not well designed to spec, and they used some design techniques that were scary," admits Steve), it was more difficult to justify with the new machine. "On the Electron we were careful to implement the high speed part in a different way to make sure if the logic worked to spec then the chip would be reliable," says Steve. "But it wasn't. And that's because the chip wasn't working to spec, not because the design wasn't."

Yet the ULA wasn't the only issue, compromises had to be made. "I think we had four accesses to the memory per microsecond and we used two for the video and two for the processor interleaved and so nothing slowed anything else down," Steve adds. "On the Electron, if you used a high-res mode then effectively, during the busy 40 microseconds of the scan time, the process had no access to the memory. If you used a lower resolution display mode then you got some access back. Basically, we halved the available memory bandwidth and that compromised the display, or the processor, or both a bit."

But it was important that they tried to resolve the issues because software produced for the Micro ▶

ESSENTIAL EXCLUSIVES

The games that made the Electron sing

QUEST 1983

■ This game is a good example of how programmers sought to get the most out of the Electron. Tony Oakden used the Electron's detailed Mode 1 for this arcade-adventure but to get more than four colours on the screen, he used the dithering technique. It mixed two or more colours in a chequered pattern to give the clever illusion of extra colours.

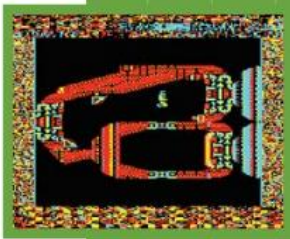
ELITE 1984

■ David Braben did not like the video restrictions of the Electron hardware yet he and Ian Bell still managed to get *Elite* working on Acorn's cut-down machine. Some elements were chopped (it only had five ships compared to the BBC Micro's six on tape and 18 on disc) and it was also black and white, but it was still out of this world.

> "I've still got an Electron lying around and it still seems to work"
>
> Steve Furber

REPTON 1985

■ Created by Tim Tyler, *Repton* struck gamers with its reptilian hero and 12 levels of brain-teasing, *Boulder Dash*-style fun. The game involved finding diamonds while avoiding creatures and falling boulders and it was so popular that the series as a whole shifted 125,000. Superior boss Richard Hanson reckoned *Repton* would still be enjoyable in 100 years.



EXILE 1988

■ If you must play just one game, make it Peter Irvin and Jeremy Smith's action-adventure, *Exile*. It may have just four on-screen colours and non-graphical data visible in the display buffer but it got around the Electron's side-scrolling restrictions and it chucked everything it could at the Electron to get the most out of it. The physics engine was amazing.

THE LAST NINJA 2 1989

■ It wasn't originally written on the Acorn Electron, yet this port deserves a play if only to stare, open-mouthed at what is playing out on the colourful screen. Coded by the talented Peter Scott and published by Superior Software, this was one of the best conversions on any platform not least because the code was somehow shoehorned into 32K.

MORE BUDGET SYSTEMS Other machines that were cut-down versions of the originals

COMMODORE 116

■ Originally envisaged for the US market at a price point of $49, the Commodore 116 was only released in Germany and some parts of Eastern Europe. Released in 1984, it was a cheaper version of the Commodore 16 with a cheap quality rubber chiclet keyboard and a smaller case.

© Toni Birer

RADIO SHACK TRS-80 MC-10

■ This budget version of the 1980 TRS-80 Color Computer lasted a year when it launched in 1983, not surprising given its 4K of (expandable) RAM paled compared to the Color Computer 2 which came out in the same year. It was well behind the march of the 64K machines competing against it.

© Jeff Keyzer

AMIGA 600

■ There wasn't much, in terms of functionality, between the Amiga A500+ and the A600 and neither was there a great price difference either. Still, it made a dramatic cut by removing the numeric keyboard, shortening the length of the machine. The A600 was going to be a cheaper A300 alternative to the A500+.

SEGA MEGA DRIVE II

■ For better or for worse Sega had an intense habit of clinging on to its consoles to extend their life. The Mega Drive II was a smaller version of the original machine, omitting RF TV output, volume control and the headphone jack. The Master System also received similar treatment years earlier, removing the card port among other functions.

© Bill Bertram

GAME BOY MICRO

■ Debuting in 2005, the Game Boy Micro was a cheaper and smaller version of the Game Boy Advance SP but it left out a useful feature: the ability to play Game Boy and Game Boy Color games. Still, the tiny console was customisable and small enough to fit rather comfortably in your pocket.

© Evan-Amos

» [Acorn Electron] *Drain Mania* was familiar platforming fare from Icon which made many great titles for the machine.

» [Acorn Electron] Most games that debuted on the BBC Micro were ported to the Electron including this, *Felix In The Factory*.

» [Acorn Electron] It sounds gross but *Kissin' Kousins* is a fast, colourful and challenging platformer.

needed to be greatly compatible with the Electron. "The idea was that it would be BBC based and would run all of the applications the Micro could run," says Chris. Acorn knew the subsequent marketing drive would depend on it and it would also be crucial for enticing customers who wanted the benefits of owning a Beeb machine without its associated costs.

In the end it became clear that full compatibility would not be possible but that the machine should at least be hardware and software compatible with the features it supported. "There was some loss of performance which was a bit of an incompatibility, but functionally it used the same operating system and the same microprocessor so there was a high degree of compatibility as far as it went until you tried to use a feature that wasn't there," explains Steve.

Speed was affected, though. Benchmarks showed that in comparisons with the BBC Micro, timings varied between the graphics modes. At its worst, the Electron would take 4.3 times as long to run the same program as on the BBC Micro. Tech journalist Paul Beverley noted in *Acorn User* that the 6502A processor was capable of running at 2MHz but it only worked to that speed when accessing ROM. During RAM access, it slowed to 1MHz. "The reason for this is that the read/write memory is arranged in four 64k by 1 bit chips, each of which contains two bits of information for each byte," he wrote. The removal of the 6845 CRT controller chip also slowed down graphics-heavy games.

One of the noticeable chip casualties during the tech team's budget-induced cull was the chip which supplied Mode 7, the only one of the eight Micro modes to be dropped. Mode 7 was the default screen mode which took up a kilobyte of memory and allowed the BBC Micro to present hi-res text. It was also the mode made familiar by the BBC's teletext service, Ceefax, and it was an original requirement ordered by the broadcaster.

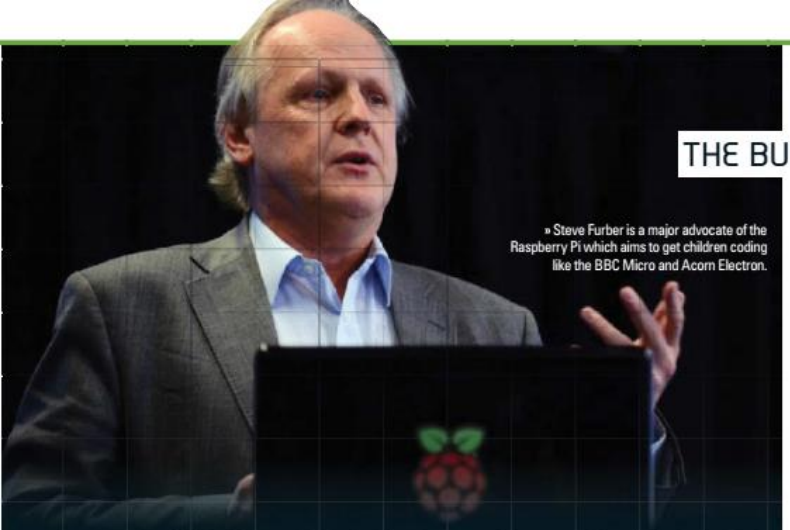
> **"The machine was not as compatible with the BBC as it might have been"**
> Steve Furber

At the same time, the chip allowed the Micro to be used as a Prestel terminal which offered a primitive form of internet. By dropping it, both functionalities were lost.

"It meant the machine was not as compatible with the BBC as it might have been," laments Steve. "It wouldn't run programmes that relied on Mode 7 being there. There were quite a few of those because the Beeb was fairly memory constrained. If you could do what you wanted to do in Mode 7, that only used 1KB of the memory so you had 31KB left for your programme and data, whereas if you used Mode 0 that used 10KB, so the full screen used 20KB, which left you with 12KB for your programme. Mode 7 was very attractive and it would give you a form of full colour graphics with very low memory use."

The hardware differences between the BBC Micro and the Electron meant many programs and games had to be re-written in order to speed them up. Titles such as *Monsters*, *Starship Command* and *Meteors* were re-coded by Acornsoft. Others such as *Rocket Raid* and *Planetoid* suffered from the Electron's lack of sideways scrolling (the latter ported well to the Electron and added features). Electron launch title *Snapper* could not have run in its original form because it used hardware timers not present in the Electron.

Acorn's answer to the loss of certain features was to provide add-on modules that could be plugged into each other. The idea was they could be chosen by consumers to fit their needs. "There were seven different add-on modules in the original plan," Chris says. "We launched the first one a year late but we were looking at having them for multiple controlling and Teletext." The first was a huge general-purpose module called Plus-1 which comprised a printer port, two parallel ROM sockets, a joystick port. Slotted into the back and costing £59, it expanded the Electron's size to a depth matching the BBC Micro.



» Steve Furber is a major advocate of the Raspberry Pi which aims to get children coding like the BBC Micro and Acorn Electron.

LOVING THE ELK

Acorn co-founder Christopher Curry lists his reasons for believing the Electron – which was nicknamed the Elk – deserves its place in computer history

1 It was so much cheaper to make so that it competed directly with our main competitor in the mass consumer market – the ZX Spectrum.

2 **The styling was crisper than the rather ponderous Beeb. The case felt solid and the computer was small enough to carry about with you.**

3 It was labelled Acorn. We had been subjected to a certain amount of identity loss during the Beeb days.

4 **The modular approach enabled 'Horses for Courses' so the initial module did all that a games player/programmer novice needed.**

5 The industrial controller market bought the module they needed. The physical arrangement meant that modules could be daisy-chained and physically bolted to its neighbour for a solid feel rather than a mass of interconnecting wires

6 **The serious number cruncher would plug on the second processor – a 32-bit from Natsemi.**

7 The modem and the Teletext adaptor were other options but many further modules remained as ideas for the future…

8 **With its huge ULA it was the most advanced custom chip design in the world at the time – pity it was also the biggest fly in the ointment.**

9 It was the inspiration for the Communicator – the networked business machine with remote servers that arrived before the internet!

10 It was also the inspiration for the Keyline shopping Terminal – based on autodial modem and ICL Traderpoint switched networks which, again, emerged before the internet.

The video ULA continued to pose problem, though, and it delayed the project for many months. "The ULAs were marketed strongly on having a very small logic swing but in my view, it was too small. We didn't fix the problem in time for the Christmas 1983 market which was the time when the Electron would have sold really well if it had been available. We got it thoroughly fixed by early 1984 by increasing the voltage swing by about 50 per cent and so we made lots of Electrons that Christmas but by then we'd missed the market and the company was left with quarter of a million unsold Electrons in a warehouse."

The computer had been formally announced on 25 August 1983, a year after it had been talked about but supplies were low with just 30,000 Electrons available for people to buy. Games began to be released that year and demand continued to be high but it wasn't until the following year that things were able to pick up. "There was a concern that the situation had definitely been compromised by technical difficulties," laments Steve.

Even so, with 32KB of RAM and a ROM containing BBC BASIC v2, it was an attractive package, retailing for a palatable £199. Power was fed by an external mains transformer within the large mains plug which helped keep the size of the computer down. The keyboard was also a full QWERTY one but it wasn't to the same quality standard as the BBC Micro (it also lost 18 keys including the familiar red function ones of the Micro).

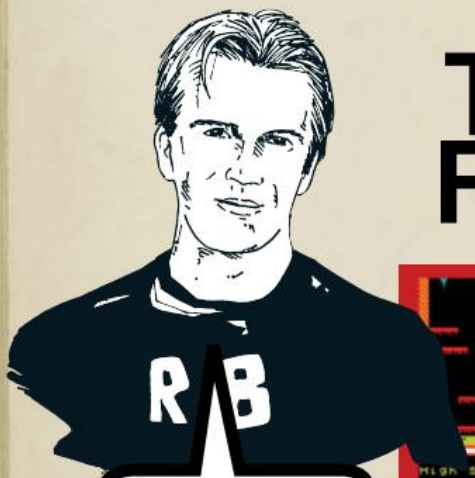
By this time, the ZX Spectrum was on the shelves and there was talk of a ZX Spectrum+. "But I think the Electron was a nicer machine than the Spectrum," says Steve. "It had a respectable keyboard and it was nicely put together. I've still got an Electron lying around and it still seems to work."

Despite that, Steve believes it was created with the wrong priorities in mind. "It was a nicely integrated package but it was a product engineered to a price point, and I prefer products to be designed cost effectively but to a function and spec point rather than to a cost point," he says. "But in terms of the price point we were aiming for, we got as much functionality in there as was humanly possible if only our functionality had functioned."

The problems meant the Electron had a short lifespan. A price cut to £129 in January 1985 helped to ignite sales, as did a later reduction to a modest £99 but Steve says the computers were being sold at a loss: "There was a large stock, so there was a reasonable market penetration but they stopped making them fairly early on so I'm pretty surprised that software sales lasted that long. The machine cost Acorn a lot of money. Acorn was selling them to Dixons for £50 or so and Dixons was selling them for £99." On the flip side, the Electron did go on to enjoy a long lifespan in software terms at least. Apps and games continued to be produced until the early Nineties.

Steve is philosophical about the Electron's time. "It hurt the company because of the millions it spent building the stock but it didn't hurt the BBC Micro. And shortly after the ARM processor, which we also worked on, turned out to be a runaway success. So the Electron was this thing in the middle that didn't quite turn out as successful. You can't win them all." *

System supplied by The National Videogame Arcade, gamecity.org



THE LATEST NEWS FROM AUGUST 1983

It's summer and it's August 1983 – the NewBrain is old news, Sir Clive's Microdrives arrive, half a million Spectrums on the loose, Smurfs, a Flan from Elan and Manic Miner. Can you dig it? Richard Burton takes his pick…

» *Manic Miner* (Spectrum): 20 caverns, mutant telephones, skating penguins, amoebatrons and the deadly Solar Powered Generator. That's heaven, that is…

The NewBrain computer, a relative newbie on the computing front, having only been available for around four months, was set to disappear as quickly as it came. Its manufacturer, Grundy Business Systems, went into liquidation, citing a lack of money as the primary cause of the firm's premature demise.

The NewBrain computer itself never really set the world on fire, seemingly being contented to be one of the smouldering makeweights in the computing/gaming scene. The machine was designed by one Sir Clive Sinclair, so let us be thankful it didn't turn out to be the first Spectrum.

Mirror Group Newspapers announced that it had plans to enter the software market. Initially it would be looking to commission existing publishers and software houses to produce titles for its software arm, Mirrorsoft, although it would later hope to produce software from within its own development team.

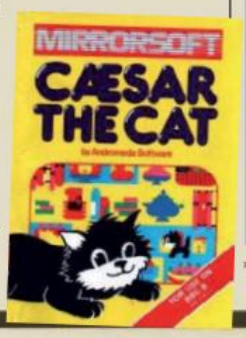
Mirrorsoft initially built up its catalogue with a swathe of educational titles such as *Caesar The Cat* and *First Step With The Mr Men*, but later branched out into popular gaming territory, creating a classic or two along the way including the truly superb *Dynamite Dan*.

There were two pieces of extremely good news for Sinclair Research that came out during August. The Spectrum, both 16K and 48K, had sold over 500,000 since its launch. An impressive quantity by any standard, and particularly so when you consider how many new computer models had been entering the market during 1983. With apparent ease, the Spectrum has conquered all newcomers to the market and watched a fair few fall by the wayside in the process.

And to add to Sir Clive's summer celebrations, the Microdrive finally became available after a troubled and long-winded development process. Priced at £49.95 for each unit, of which you could network eight together, and a further £29.95 for the Interface 1, they were (at that time) a relatively cheap alternative to disk drive. Whether the Microdrive cartridges, priced at £4.95, would prove to be reliable, was something that would unfold over the coming months.

Although the first preview sightings of it had been observed in July, August was the month that finally saw the much-anticipated *Manic Miner* from Bug Byte available to buy. The initial reactions to the game were almost unanimous in proclaiming it as one of the best ever on the Spectrum. When you consider some of the gaming output the Spectrum received on a regular basis, including oodles of *Space Invaders* and *Frogger* clones, this probably wasn't such a difficult task.

Curiously, several magazines, when previewing it, noted that the platform game featured 16 caverns while the final released version contained 20. Maybe Matthew Smith managed to crowbar another four caverns into the game before it went into production? Whatever the case, *Manic Miner* and Mr Smith, the retro-gaming equivalent of Marmite, was selling games by the shed-load.



» Mirrorsoft's first foray into the world of software was with educational titles such as *Caesar The Cat*.

Psion and Sinclair released *Scrabble* for the Spectrum. Creating a classic word game on a Spectrum was pretty good; stuffing an 11,000 word vocabulary in there too was nothing short of amazing. The game was well received by all that reviewed it and although it boasted a hefty £15.95 price tag, initial sales were extremely promising. It later became one of the games bundled with future Spectrum hardware releases and can now be found in virtually every single eBay Spectrum games auction ever listed, ever, ever…

Those Liverpudlian spendthrifts running Imagine Software announced three further new arrivals ready for release from their programming teams. The Commodore 64, which was rapidly gaining in popularity, in no small part to a major reduction to its price this month, saw a conversion of the popular shoot-'em-up *Arcadia*. For the Spectrum there were two new titles: *Zip-Zap* and the very tasty-looking *Zzoom*, which involved shooting enemy planes and tanks whilst saving refugees, as opposed to slurping on a tri-coloured fruit-flavoured ice lolly.

Already out and adorning the shelves of John Menzies was *Jumping Jack*, a title with simplistic gameplay and even simpler graphics. Get your stick man from the bottom of the screen to the top and… er… that's it.

» *Scrabble* (Spectrum): Look in any loft, absolutely any loft, and you'll find one copy of *Scrabble* and one copy of *Make A Chip*…

» *Zoom* was released by Imagine for the Spectrum. Zoom was released by Lyons Maid for hot days. Don't get the two confused.

There was confusion however, as Sumlock Software had already released a *Frogger* clone called *Jumpin' Jack* the previous year. Imagine and Sumlock, keen to avoid a spot of legal wrangling and unwarranted expense, came to an understanding regarding the similarity of the game names and an amicable result was reached. Sumlock would rename its future C64 and Atari conversions of *Jumpin' Jack* to *Leggit* whilst retaining the original name for the Vic-20 version. In the cutthroat world of software houses and games development, common sense had shockingly prevailed.

Gyruss, the tubular shoot-'em-up arcade game that made Julian Rignall the Video Arcade Game Champion for 1983, received its official release in August. If you're not familiar with the game, just pretend for a moment that *Tempest* and *Galaga* got together, got a bit saucy and had an illegitimate kid – that screaming newborn would be *Gyruss*.

Gyruss can claim to hold a tiny portion of arcade gaming history in that it was the first arcade game to feature full stereo sound. The man behind *Gyruss*, Yoshiki Okamoto, is also credited for bringing us *1942* (the game not the year) and the *Street Fighter* series.

There was great news for those youngsters who had spent many an hour travelling with dad to the nearest National petrol station to fill up the old Ford Cortina Mk3 purely on the off-chance of getting another plastic Smurf from their latest petrol promotion. A new Colecovision game based on the little blue Belgian Smurfs had just hit

» *Jumping Jack* (Spectrum): Imagine's new release was an exceedingly simple game with even simpler graphics. It played really well though.

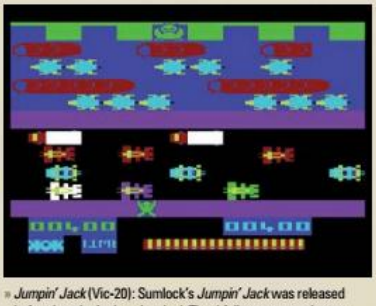
» *Gyruss* (Arcade): Newly released, this often overlooked arcade classic combines elements of *Tempest* and *Galaga*, all with stereo sound. Groovy.

the shops. Disappointingly there was no Father Abraham promotional false beard and flexidisc set.

Smurf Rescue saw you running and jumping through colourful yet hazardous screens as well as clashing with bats and spiders en route to Gargamel's Castle to save Smurfette. Not a hard game by any stretch of the imagination, but it was presumably targeted at younger gamers.

After a quiet couple of months for new computers, the British company, Elan Computers, revealed it would launch its new system at the Great Home Computer Spectacular at Olympia in September – although it wouldn't be available to buy until early 1984. History goes on to show it was well into 1985 before it was actually readily available. Unfortunately by that time, the computing market had moved on and the similarly coloured Amstrad CPC464 had taken a large chunk of the Elan's prospective market. When it did eventually appear, the Elan computer was renamed the Enterprise although it had already had several names changes along the way including Samurai, Elan, Oscar and the tasty, yet uncomputery sounding, Flan.

One old-timer trying to get a second wind was Atari with its 2600 console. Atari decided to lower the price of the machine by £20 to £69.99 and also added the *Pac-Man* game cartridge for free, which normally retailed at £29.99. Although



» *Jumpin' Jack* (Vic-20): Sumlock's *Jumpin' Jack* was released before Imagine's *Jumping Jack*. Thankfully a compromise was reached rather than legal action.

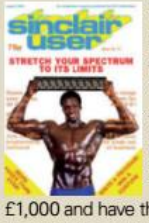
WHAT THE MAGAZINES WERE SAYING...

Computer & Video Games

The C&VG cover featured a strange-faced gladiator, highlighting yet another type-in listing that the magazine seemed so fond of at the time. Inside, there was news on Imagine's new games, emphasised by the double-page adverts Imagine had splashed across this and every other periodical with even the vaguest whiff of computing in it.

Home Computing Weekly

HCW adorned its cover with a bikini-clad blonde girl (again) holding a ZX81. It had no connection to anything in its pages and was there purely for ogle factor. Good work. Inside was a rare early interview with the usually impenetrable software house, Ultimate Play The Game.



Sinclair User

Inside, there was the announcement of the Cambridge Award, sponsored by software house CCS, to find the best home-made game of 1983. The winner would get £1,000 and have their game marketed by CCS. The winning game was *Battle 1917*. Strangely, second- and third-placed games, *War 70* and *Oligopoly*, also became proper CCS releases.

CHARTS

AUGUST 1983

VIC-20

1. Arcadia (Imagine)
2. Cosmiads (Bug Byte)
3. Skyhawk (Quicksilva)
4. Escape MCP (Rabbit Software)
5. Panic (Bug Byte)

SPECTRUM

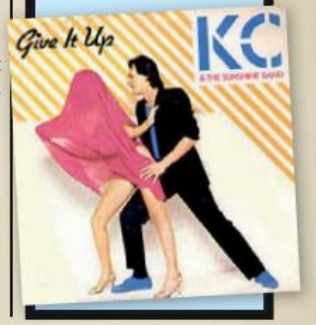
1. Jet Pac (Ultimate)
2. Manic Miner (Bug Byte)
3. Transylvanian Tower (Richard Shepherd)
4. Tranz Am (Ultimate)
5. Horace And The Spiders (Melbourne House)

DRAGON 32

1. Nightflight (Salamander)
2. Space Wars (Microdeal)
3. Frogger (Microdeal)
4. Dragon Trek (Wintersoft)
5. Cuthbert Goes Walkabout (Microdeal)

MUSIC SINGLES CHART AUGUST '83

1. Give It Up (KC And The Sunshine Band)
2. Club Tropicana (Wham!)
3. Double Dutch (Malcolm McLaren)
4. I.O.U. (Freeez)
5. Wherever I Lay My Hat (Paul Young)



» *Smurf Rescue* (Colecovision): You (a Smurf) have to rescue the kidnapped Smurfette. What happens after that is up to your filthy imagination…

the Atari 2600 was showing its age, games developers were still producing software for it on a regular basis and none more so than Activision. The latter had three new titles ready for release for the wood-grained beast. *Oink*, *Plaque Attack* and *Keystone Kapers* would be available during August at £29.99 each.

There was also great news for Oric owners looking for a bit of quality adventuring – *The Hobbit* by Melbourne House made the leap from the mainstream machines onto the Oric-1.

With summer here and ice cream, sandy sandwiches and bikinis on the agenda, games were a little thin on the ground with the big companies saving their good stuff for the impending Christmas sales push. However, some choice gaming cuts were to be had and the magazines needed little help to point them out…

Computer & Video Games reviewed *Tombstone City* (TI99/4a, Texas Instruments), *Gridrunner* (C64, Llamasoft), *Scrabble* (Spectrum, Psion), *Killer Gorilla* (BBC, Micropower) and on cartridge, *Gorf* (VIC-20, Commodore).

There was also a review of *Miner 2049er* (Atari 400/800, Big Five Software). Bill Hogue's ten-screen platform game was the inspiration for the newly released *Manic Miner*, according to Matthew Smith. On the flipside, C&VG gave *Sheepwalk* (Spectrum, Virgin Games) a big fat zero for value for being no better than a BASIC type-in and as much fun as collecting scabs.

The ever-expanding page count of Your Computer included a couple of pages looking at *Pssst* (Spectrum, Ultimate), *Gridrunner* (Dragon 32, Llamasoft), *Xenon* (Oric, IJK Software) and *Qix* (Atari 400/800, Atari). Meanwhile Popular Computing Weekly again featured software reviews for some of the more exotic systems around, as well as the old favourites. Games coverage included *Jungle Fever* (Spectrum, A&F Software), *Pheenix* (Spectrum, Megadodo Software), *Cygnus* (Jupiter Ace, Richard Roberts Software), *California Goldrush* (C64, Anik Microsystems), *Battle Of Britain* (Lynx, Maincomp), *Arena III* (TI99/4a, Lizard Games), *Xadom* (Spectrum, Quicksilva) and *Android Attack* (BBC, Computer Concepts).

Issue 17 of Your Sinclair included Spectrum reviews of *Tobor* (Elfin Software), *Spawn Of Evil* (dk'Tronics), *Halls Of The Things* (Crystal Computing) and *Dallas* (CCS).

NEWS

AUGUST 1983

15 August saw guitarist Johnny Ramone (real name John Cummings), of the punk band The Ramones, receive serious head injuries during a street brawl. Johnny suffered a fractured skull during a fight with another musician whom he had seen with an ex-girlfriend. He was admitted to a New York hospital where he underwent surgery. He later made a full recovery.

Another musician hitting the headlines was Paul Simon, who on 16 August married Princess Leia. Carrie Fisher had been dating him on and off for a few years but they finally tied the knot during the Simon & Garfunkel World Tour. The marriage lasted just 11 months with Fisher's notorious drug problems being one of the contributing factors to the short-lived wedlock.

30 August saw Guion S Bluford become the first African-American astronaut in space when he was part of the crew for the eighth Space Shuttle mission aboard Challenger. It was also the first shuttle mission to take off during the night. In total, Mr Bluford spent 688 hours in space – which is almost as long as it takes to attain 'Deadly' status in the space trading game *Elite*.

Two films premiering in the USA this month, both of which were substandard fare in their respective series, were *Smokey And The Bandit III* and *The Curse Of The Pink Panther*. Oh man, something stinks around here and it ain't my special haddock skin underpants…

» Paul Simon's wife-to-be arrived at the church in a wedding gown he was sure he had seen somewhere before…

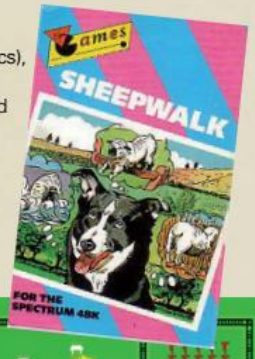
» *Pac-Man* (Atari 2600): Find a big hole in New Mexico and treat yourself to 5 million of these (plus free concrete).

» The multi-named Enterprise (formerly Flan) seems to have inspired the Amstrad CPC's livery with its red and green keys.

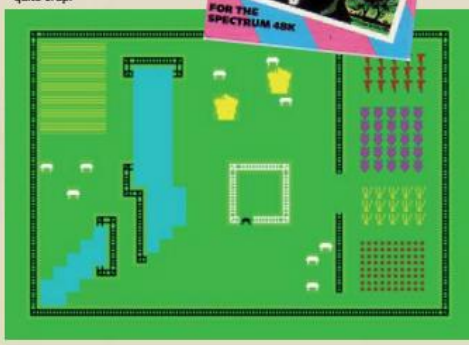
» *The Hobbit* (Oric): The best-selling adventure finally makes it way onto the not so best-selling home computer.

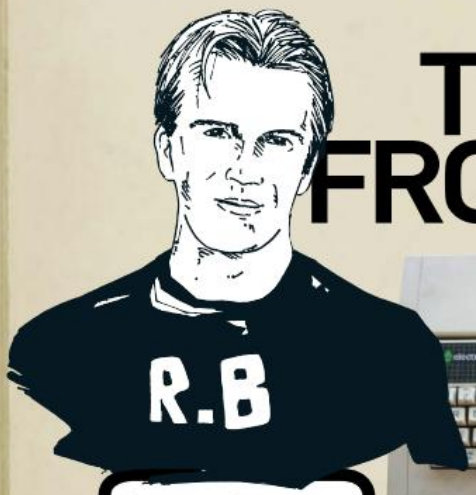
» *Killer Gorilla* (BBC): Micropower's *Killer Gorilla* was conversion number 934 for the year of the tried and trusted arcade classic.

» Activision's three latest releases: one about pigs, one about teeth and one about a fairytale.



» *Sheepwalk* (Spectrum): Newly formed Virgin Software released this as one of its launch titles. It was, unfortunately, really quite crap.





THE LATEST NEWS FROM SEPTEMBER 1983

September 1983 – from Acorns come little Electrons, Dragon almost dies, the ZX81 gets cloned, Atic Atac and Lunar Jetman arrive and a thermo-nuclear world war is narrowly averted by a man with a moustache. Richard Burton has his finger on the button…

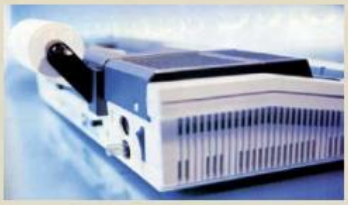
» The long-awaited little sister to the BBC, the Acorn Electron, finally arrived after a 16-month wait.

The Acorn Electron, which, like Sir Clive's microdrive, had been blighted by delays and technical hitches, was finally released. There had been a 16-month gap between announcement and launch – mainly due to the technical complications in producing the largest custom-built ULA chip in a home micro.

In making such a chip, Acorn hoped that it wouldn't be copied and that cloned versions of the Electron wouldn't appear in Eastern Europe, as happened with Spectrum. With a price tag of £199, it would be interesting to see how the Electron fared against more competitively priced, established home computers.

While the Electron remained a technical sketch on a drawing board, Spectrum forged ahead, out-selling anything vaguely considered to be a computer in the UK. The new boy would need to make an impact on potential purchasers should it want to take a slice of Sinclair's already impressive position in the market.

Another newcomer this month was Sharp's MZ-700 computer. Featuring an in-built printer/plotter and tape deck, the machine would cost around £420. Of course, a computer is only as good as its software base. Luckily, Solo Software launched a host of titles for the new machine ensuring a small but readily available supply of games on the day of launch. Sharp had to point out though, that the machine was intended more as a programmers' machine than a gamers' paradise. Maybe Sharp was covering its back should sales not reach expectations?



» The Sharp MZ700 had the interesting added extra of having a toilet roll dispenser situated on the rear of the machine.

» Lambda Electronics was creating its own attack of the clones with this ZX81 copy, the Lambda 8300. Sinclair wasn't happy…

Sinclair Research had taken exception to Hong Kong computer manufacturer Lambda Electronics for producing a computer that Sinclair claimed was a clone of its ZX81. The Lambda 8300 contained virtually identical internal circuitry and the ROM was indistinguishable.

However, externally the Lambda was a different machine altogether. Aesthetically speaking it looked a lot nicer, with a more reactive keyboard, an in-built speaker and also the quirky feature of pre-defined alien graphics on the number keys. Sinclair wasn't impressed though and sought an injunction to stop production of the machine…

Dragon Data, producer of the Dragon 32 computer, found itself on the brink of going out of business. Luckily, a last minute rescue package of £2.5 million was arranged by the existing shareholders to save the company, for the immediate future.

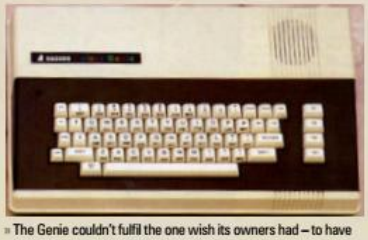
After only recently attempting to break into the US market with its systems, the company seemingly became embroiled in cash-flow problems after a particularly quiet summer for computer sales. This was exactly the same set of circumstances that Grundy Business Systems found itself in, when it and its micro, the NewBrain, went under in August.

With Dragon 32 sales at around 80,000 since launch, the projected guesstimate of 300,000 units by the end of 1983 looked to be either very optimistic or woefully inaccurate. That said, with Dragon Data still actively developing new products, and software aplenty still being produced, the future for Dragon looked a lot healthier than that of the NewBrain.

As the home-computing scene got more competitive, so too did the pricing of the systems. Texas Instruments announced it would be cutting the price of its TI99/4a machine from £149.99 to £99.99 and Lowe Computers, which distributed the Colour Genie computer, trimmed its machine price from £192 to £168 while doubling the memory from 16K to 32K. Ultimately, it didn't help its sales much…

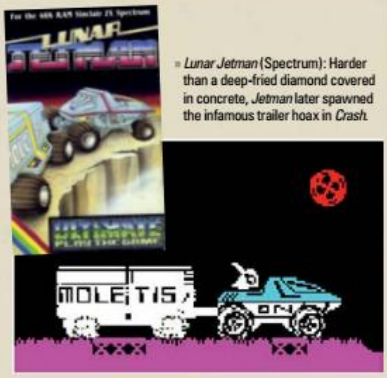
Sinclair Research attempted to squeeze the last remaining droplets of life out of the ZX81 by selling the machine with a RAM pack and one game for the knockdown, bargain-bin price of £45. Although Sinclair was keen to prolong the life of its 1K machine, WHSmith was less impressed and decided to stop producing a top ten software chart for it, as it decided not to stock any new ZX81 releases.

With Ultimate Play The Game gathering many admirers with its previous games, it kept the pressure on other companies with two further new releases for the Spectrum. First up was *Atic Atac*, the castle-wandering, key-collecting game that gave you a choice of characters to begin the game with. It also had the brick-hard follow-up to *JetPac*, *Lunar Jetman*, which



» The Genie couldn't fulfil the one wish its owners had – to have some decent games software to play.

» *Atic Atac* (Spectrum): Another Ultimate classic although a little too easy to complete, which can't normally be said for their games.



» *Lunar Jetman* (Spectrum): Harder than a deep-fried diamond covered in concrete, *Jetman* later spawned the infamous trailer hoax in *Crash*.

would later spawn a *Crash* magazine comic strip and the infamous lost trailer hoax.

Atari, which had been planning to release its new 5200 console in the UK, decided not to, in favour of promoting its five-year-old wood-grained beastie, the 2600. Software for the 2600 would continue to be available with plenty of new releases appearing via Atari, Activision and Imagic. Atari also announced plans to make a series of peripherals for the machine including a keyboard and a speech synthesiser, in an attempt to push the console as a home computer system.

Imagic, which over the previous months had been annoying Atari with *Demon Attack* – its own interpretation of Atari's official *Phoenix* title – unveiled yet another version of the game, this time for the Philips Videopac G7000 console. Not only was this the first game by Imagic for the system, it was also the first ever independently produced game on the console.

Up until now, Philips had dominated the G7000 software market being the

» Atari's new console was due for a release in the UK, but Atari had second thoughts and pulled the launch.

» The new peripheral aimed at extending the shelf life of the Atari 2600. Note the keys are in alphabetical order.

only producer of software for the console. However, with Imagic starting to dip a toe into the murky waters of the G7000 software market, other game producers were taking a very keen interest in how Imagic's latest offering would fare. Imagic followed up *Demon Attack* shortly afterwards with another conversion of one of its top-selling titles, *Atlantis*.

Brand new software house, Incentive Software, launched this month with its first title, *Splat!*, due out before the end of September on the Spectrum. *Splat!* was a simple non-stop scrolling maze game that required quick reactions as your character, Zippy, negotiated a maze that changed direction without warning while you tried to eat as much grass and plums as you could. If you completed a level, you would get an enthusiastic synthesised 'Yippee' emanating from your Spectrum. Graphically it was nothing special, however, it was a very addictive and extremely frustrating game.

Although not the most high-profile company, Incentive would later go on to have great success producing the Graphic Adventure Creator, which would create a whole new wave of bedroom coders producing homebrew adventure games and the impressive, if somewhat slow,

» The Philips Videopac G7000 looked like a big grey Speak & Spell but independent games producers were starting to take notice of it.

» *Splat!* (Spectrum): Incentive Software's first game was this manic maze game which tested your concentration to the max.

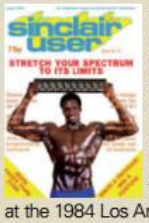
WHAT THE MAGAZINES WERE SAYING...

Computer & Video Games

C&VG, among the masses of type-ins and occasional games reviews, dedicated two pages to highlighting its new Arcade Games Champion, Julian Rignall (apparently he's fluent in Welsh you know). What really caught the eye, though, was the big two-page advert for the recently released Vectrex system from MB Games. Hmmm… Vectrex…

Which Micro? & Software Review

The often-overlooked and underrated magazine, *Which Micro?*, featured one of the first full reviews of the new Acorn Electron, giving it a positive write-up. A review of the new Sharp MZ-700 also featured, but impressed the reviewers less. Maybe the built-in printer and cassette deck was just too much?



Sinclair User

SU's regular feature, User Of The Month, spotlighted Stephen Sowerby, a British Olympic hopeful who, with the aid of his ZX81, was hoping to get to, and win, the modern pentathlon at the 1984 Los Angeles Games. Quite what the ZX81 added to his chances was anyone's guess, although he did make it to the Olympics, finishing 37th out of 52.

CHARTS

SEPT 1983

VIC-20

1. Arcadia (Imagine)
2. Wacky Waiters (Imagine)
3. Cosmic Cruncher (Commodore)
4. Skyhawk (Quicksilva)
5. Gridrunner (Llamasoft)

SPECTRUM

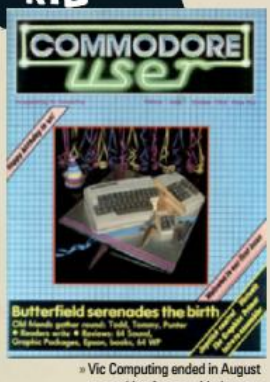
1. Jet Pac (Ultimate)
2. Manic Miner (Bug Byte)
3. Tranz Am (Ultimate)
4. 3D Tanx (DK'Tronics)
5. Ah Diddums! (Imagine)

BBC

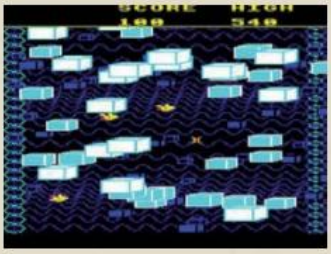
1. Felix In The Factory (Micropower)
2. Danger UXB (Micropower)
3. Gunsmoke (Software Invasion)
4. 3D Bomb Alley (Software Invasion)
5. Super Invaders (Acornsoft)

MUSIC SINGLES CHART SEPT '83

1. Red Red Wine (UB40)
2. Tonight I Celebrate My Love (Peabo Bryson & Roberta Flack)
3. Double Dutch (Malcolm McLaren)
4. What Am I Gonna Do (Rod Stewart)
5. Mama (Genesis)



» Vic Computing ended in August to combine forces with the new *Commodore User*, coming to newsagents very soon…



» *Sea Lord* (BBC): A strange little game from Bug Byte, an underwater shoot-'em-up, which is testing due to the confused screen graphics.

» *Maziacs* (Spectrum): Don Priestley created this infuriatingly maddening maze game which still has people tearing their hair out.

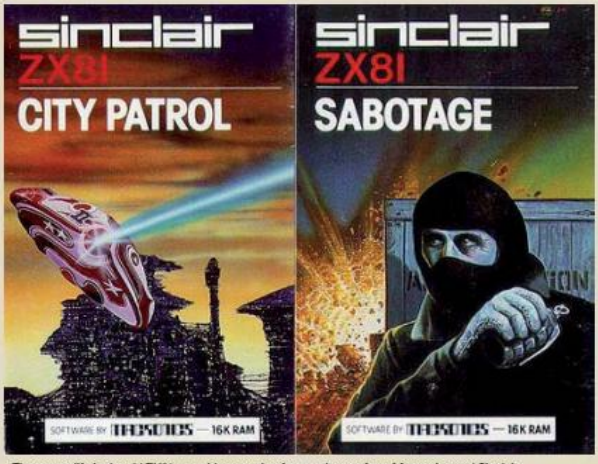
» *Super Skramble!* (C64): A good solid game from Terminal Software. Satisfying graphics, pleasant music make a half-decent shooter.

Freescape 3D landscape engine which was used in its future titles *Driller*, *Darkside* and Castle Master.

Although the ZX81 was coming to the end of its natural shelf-life, that didn't stop people releasing really quite pointless gadgets for it. This month saw the Wobble Stopper. No, not a medical breakthrough for particularly bad cases of impotence, it was in fact a piece of metal that stopped your RAM pack from wobbling and potentially killing it in an instant. It had a use, it had a function, and it looked really crap. Still, a bent piece of metal with a tightening screw stuck in the back for £5.25 could be considered reasonable value if it stopped your computer dying. That said, stuffing a few beer mats under the RAM pack was a cheaper, if less hi-tech solution.

There was splendid news for the ever-expanding band of C64 users and ardent Vic-20 supporters. A new magazine was announced that would cater for their every whim, just as long as that whim involved programming and type-ins. The ingeniously titled *Commodore User* (incorporating Vic Computing) would see its debut issue hit the newsstands in October.

C&VG reviews for September included *Manic Miner* (Spectrum, Bug Byte) which earned the blandly titled Reviewers Choice award for top game



» There was life in the old ZX81 yet with a couple of new releases from Macronics and Sinclair.

NEWS

SEPTEMBER 1983

With the movie *War Games* still fresh in peoples' minds, a real-life nuclear incident was played out on 23 September, one that could have had a less than happy ending. Russian Lieutenant Colonel Stanislav Petrov averted a nuclear war after the control room at the early-warning bunker at the Serbukov-15 nuclear command centre began indicating that the USA had launched a nuclear missile at the USSR.

» How do you like your mushrooms? Stuffed, pureed or highly radioactive? Shiitake!

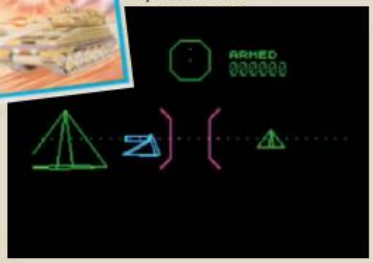
Ordinarily, the officer in charge would verify the threat and contact the Soviet leadership who would issue an immediate no-questions-asked response with a massive counter-strike against the aggressor. Petrov knew the system was erratic, and while his computer indicated a further four missile launches, contrary to procedure, he sided with his gut feeling rather than confirming the launches.

He couldn't be a hundred per cent certain whether it was a system fault or a real attack, only having the information displayed before him to react to. The Soviet hierarchy would retaliate on his analysis and a devastating nuclear war could have ensued with just the press of one button, START (CTAPT in Russian). Luckily Petrov didn't possess an itchy trigger finger…

Rather than receiving praise for his world-saving actions, Petrov was dismissed from the Soviet military for disobeying military procedure. However, in 2006, rather belatedly, he received the World Citizen Award at a meeting at the United Nations.

Tip: Play *Theatre Europe*, pretend it's real and fill your pants…

» This man, Stanislav Petrov, saved the world. Not bad for a day's work…



» *3D Combat Zone* (Spectrum): Artic's *Battlezone* clone was top notch, so it was no surprise to find out that it was written by one Jon Ritman.

of the month. Other games, which didn't fare quite so well were *Talking Android Attack* (Dragon 32, Microdeal), *Dig Dug* (Atari, Atari 400/800), *Sea Lord* (BBC, Bug Byte), *Chopper Rescue* (Spectrum, Blaby Games) and *Super Skramble* (C64, Terminal Software).

Sinclair User had a below par set of games to review for its readership, saved only by Jon Ritman's excellent *3D Combat Zone* (Artic Computing). Among the other sub-standard gaming fare on offer was *Firebirds* (Softek), *Trax* (Soft Joe's Software) and *Sabotage* and *City Patrol* (both Macronics/Sinclair, ZX81).

The ever diverse reviews from *Popular Computing Weekly* once again covered a good cross-section of systems. Just some of the reviews featured included *Copter Captive* (TI99/4a, Byteware), *Super Dogfight* (C64, Terminal Software), *Apocalypse* (Spectrum, Red Shift), *Oricmunch* (Oric 1, Tansoft), *Savage Toad* (Laser 200, Abbex), *Dictator* (BBC, DK'Tronics), *Dragrunner* (Dragon 32, Cable Software), *Luna Crabs* (Spectrum, Micromega), *Hover Bovver* (C64, Llamasoft), *Serpent's Tomb* (ZX81, Vortex Software), *Harrier Attack* (Oric 1, Durell Software) and the classic *Maziacs* (Spectrum, DK'Tronics).

» *Harrier Attack* (Oric): Durell's enduring game was a most needed shot in the arm for the Oric gamer's collection.

» *Hover Bovver* (C64): If you want a whacked-out game, please see Mr Minter over at Llamasoft. Weird subject, great game.

THE MAKING OF...

MANIC MINER

SAT AT THE VERY DESK WHERE IT WAS WRITTEN, MATTHEW SMITH WATCHES MINER WILLY LEAP THROUGH ALL 20 SCREENS OF HIS SPECTRUM MASTERPIECE. PAUL DRURY HOLDS THE ASHTRAY AND TAKES NOTES

CENTRAL CAVERN

"This was the test screen, the first of everything," begins Matt. "The collapsing floors, conveyor belts, the jumps, the colour clash. Using two colours in the bricks of the solid platforms and then when you jump up on to the first platform, that's all testing for colour clash. It has one of all the difficult jumps in, too." How was difficulty determined, we ask. "From the end of the conveyor belt to the higher platform counts as a difficult jump… but I put in a safety net. I plotted it out on graph paper: two pixels and then a parabolic, acceleration down until you hit terminal velocity, at about four pixels a frame, then you started falling straight down. I'd do all the testing and see where you'd land." And what about the clockwork baddie on the conveyor belt? "Oh, just something I'd drawn. There's a bit of Yellow Submarine in him – that's where the mouth in the belly came from. The original sketches I did had water instead of conveyor belts. There were going to be streams of water and I was thinking about making it impossible to go backwards. That would make it more of a puzzle – working out how to get somewhere without going upstream – but by the time I started coding, they'd become conveyor belts."

THE COLD ROOM

Matt stares intently at the 'keys' on this level. "They're snowshoes. Well, tennis rackets." He then starts tapping the screen before we gently remind him it isn't a touchscreen. "Mmm, oh, right. I was just thinking about tweaking a pixel. I'm not sure if it would be better light or dark. I must have tried it both ways back then." Ever the perfectionist. And what about the shuffling birdies? "Everyone knows penguins are fully signed up members of the funny animals union." As Willy slowly descends the 'chimney', Matt chirps up, "For disintegrating platforms, I used the video memory of the Spectrum. It was the first machine I had with a bit mapped screen." We note that the Cold Room level is considerably easier than the previous one. "Oh, I didn't do the screens in order. No, I did the first screen first and then I think I made some attempt to sort the rest out and give a graduated gameplay. That's why the first screen is disproportionately hard, because it wasn't part of that scheme."

THE MENAGERIE

Matt scans the collection of creatures on screen. "Here we've got spiders, emus, well, ducks or something. Yeah, they're flying! Well, their feet are coming off the ground. They're having a go! Hang on; there are only two kinds of animal in there. That's a bit lame. There should be at least three before you call it a menagerie!" Matt's French may be questionable, but we wonder if the birds do signify another sort of love, that of a man for his footy team? "Yeah, you could see it as a tribute to Liverpool FC. They're not far off being liver birds and I'm definitely a red shirt."

ABANDONED URANIUM WORKS

Matt denies this is a comment on the nuclear paranoia of the Eighties, though it did play on a very real fear. "It's a room full of difficult jumps and you have to go across it more than once. It was supposed to be scary, about testing your confidence." He starts to contemplate the nature of death. "Miner Willy is two characters high and if you fall four characters you're dead. Two, you're safe and three… hang on, was two deadly? Oh, I can't remember…" His memory works better when recalling how he coded Willy's famous leap. "The first two frames, you go four and four pixels, that's one whole character, then it's 3, 3, then 2, which makes eight pixels and another whole character. Then 2, 1, 1, 0, 0, -1, -1, -2, -2… it's a smooth curve rounded to the nearest integer." He grins and inhales deeply. And the performing seals? "Oh, I think that was because I had a six pixel rotating ball and thought, how am I going to make this into a character? I know, I'll stick a seal below it!"

EUGENE'S LAIR

So to the memorable snapping bogs of Level 5. "I was telling my little brother Anthony about the toilet monster that reaches up and grabs you. Yeah, he really believed there was a green monster that lived down there," chuckles Matt maliciously. Not a comment on fellow coder Eugene '*Wacky Waiters*' Evans' career going down the pan, then? "I'd met Eugene a few times. We were passing acquaintances. He'd hit the press before me and he played the media darling far more thoroughly than I did. Must have been jealousy, because he was working for the 'other' company, Imagine and I was still aligned with Bug-Byte when I was doing this. And they were buying flash cars first and writing good games second. Actually, I'd have got more trading in a smashed up sports car than I've had from any residuals." Are those gold bars Willy is collecting? "Nah, they're supposed to be stacks of credit cards. I had a choice of putting in a line to show they're stacked."

THE MAKING OF... MANIC MINER

PROCESSING PLANT

An obvious homage to the arcades of Matt's youth. "Yeah I used to play *Pac-Man* at the Unit 4 cinema in Wallasey." ("Don't look for it, it's not there any more" – *Spinal Tap*, ed). The addition of legs was a feeble attempt to avoid copyright infringement, perhaps? "Oh, I think we were all relying on the American 'Fair Use' provision, though thinking about it, that didn't actually exist in British law at the time. No, there were spare pixels free at the bottom. It had to be ten pixels wide to make it scroll smoothly and because it's round, it's got to be ten high, when everything else is 16, hence the legs." We note the level requires some tricky traversing along platforms with restricted headroom. "Yeah, I was designing routes by this time. I usually tried to get you to go across the screen as many times as possible, which makes things more interesting," cackles the evil genius.

THE VAT

Given Matt's on-off relationship with money over the years, we wonder if this is a reference to the Inland Revenue? "Nah, just a huge block of collapsing floors," he assures us. "Pure aesthetics really and no extra code needed. These collapsing floors were supposed to be one thing and I was seeing what else they could be. That's serendipity, that." And what of the kangaroo connection? He exhales and ponders for a while. "Erm, kangaroo meat? Dog food factory? Dunno… could be… random thoughts." With all the disintegration, it must have been an awkward screen to test? "With The Vat, I had my route and tested it over and over again. I didn't really know if there were any other routes. Some of these levels I've only ever done once, to this day. Same principle with the Banyan Tree in *Jet Set Willy*. There's no random numbers in the game. Every time you go into a level, you get the same start positions and speed, so if I can do it once then it's going to be a bit difficult for the good players." That's something of an understatement, Matt. "Quality control," he winks back.

MINER WILLY MEETS THE KONG BEAST

Another nod to the New Brighton arcades he frequented as a lad. "Barrels, bananas… I should have put hammers in and it would have been a complete tribute to *Donkey Kong*," he notes. It includes some testing jumps – "Yeah, some fives on this," Matt confirms, referring to the width of the gap in characters, "and they had to be pixel perfect." – and the first appearance of switches, though flipping both wasn't obligatory. "Maybe that was a mistake," muses Matt. "Maybe you were supposed to flick it to finish the level and I just completely forgot to test it." Then he has an epiphany. "Ah, no! The only violence in the game is completely optional! That's for if you feel a pathological compulsion to kill the Kong Beast. I think I was just being a hippy…" He adopts a 'Neil from *The Young Ones*' accent, which is not hugely different from his real voice. "You don't have to kill the monkey, man!"

WACKY AMOEBATRONS

"Yeah, a straight horizontal grid, innit," observes Matt of one of the game's more traditional levels. But are those bog brushes on wheels? "Ah, because your collisions with the sprites are pixel perfect, here I was testing what shapes you could clear. Willy was always 16 pixels high, but different widths at different points during a jump. I was testing the limits, so I made it as tall and thin as possible. I think I was going to make it go up and down so you could only jump over it at certain times, but then I worked out that even at the full height a sprite could be, you could still get over it if you timed it right – this was the level where I was finding that out." It's also the first level to undergo a change when *Manic Miner* was re-released through Software Projects. "Yeah, the amoebatrons were originally the Bug-Byte logo, so I changed them when I left. Didn't need any legal advice on that one!"

ENDORIAN FOREST

Those creatures look uncannily like Ewoks, Endor was their home planet and *Return Of The Jedi* was released the same year as *Manic Miner*. Let's take a wild guess and say you were a *Star Wars* fan, Matt. "I was that week! Went to see it, came home and stuck this screen in. Would I be a Jedi or Sith? Oh, Jedi! In fact, I put that on the last census as my religion." At this juncture we suggest a pause to replenish the Guinness and empty the ashtray as we're on screen ten and so halfway. "Nah, this is screen nine," Matt protests. We assure him we've reached double figures. "Oh, sorry. I always start counting from zero." You can't take the hex out of the boy…

ATTACK OF THE MUTANT TELEPHONES

The title is a reference to fellow coder, Jeff Minter. "I met Jeff a few times, when we won Golden Joysticks. We got on alright. Talked about music and stuff." We recall you said you liked this screen during your appearance on Iain Lee's TV documentary *Thumb Candy*. "Those phones are probably my favourite. Do you wanna see a photo of the actual phone they were modelled on? A BT 300 series." Matt goes upstairs but returns empty-handed. Quite a busy screen, this. Was there a limit to the number of enemies you could include? "Yeah, four going up and down and four going left and right. Hang on, I think you could change that to eight going up and down or left and right. I think I did that on certain screens. The Skylab Landing Bay… But yeah, eight was the limit. Due to memory. And speed. There's only so much you can draw before everything slows down. So make eight a constant and you don't have to worry about it!"

RETURN OF THE ALIEN KONG BEAST

Alien because of the pulsating head we assume, Matt. He squints at the screen. "Yeah! It is going in and out!" Matt simulates the throbbing with his hands and this seems to trigger the memory of a little coding quirk. "I gave all the screens literal numbers, so like, if you were using one of those editors that came out, this screen would always have to have a Kong Beast in. Every screen had to share the same code – I couldn't do 20 different programmes – so I'd have flags and if it was one of those screens and another test was passed, whatever it was, Kong, Eugene or whatever, would go to the bottom of the screen and stay there." We watch Willy plunge to collect the final banana before landing safely in the exit. "Do you have to get there before Kong does? No? Oh, I suppose I was playing with you a bit with that," grins Matt.

ORE REFINERY

"Are those lumps of ore? Probably," says Matt. "And you'd imagine a skull and crossbones not to be the target, but it is!" Despite Willy holding one over his shoulder on the cover of the second edition of the game, this level has one of only two ladders that appear in the game. It also has a lovely blinking eye. Any significance, Matt? "Oh ore!" he cries, cryptically. We admire Willy's well-timed, 'no going back' dash to the exit. "Oh yeah, you could've played for ages and get it wrong with that. Ha! I'd draw the platforms on graph paper and put arrows in where… No, no I didn't," he says, correcting himself. "I didn't use graph paper for *Manic Miner*. I wrote an editor on the Tandy for it. I wasn't using graph paper for level design, I was painting them in and playtesting them. I'd do a bit and see if it was possible to get past that. Then I'd add the next bit." And so his masterpiece evolved…

THE MAKING OF... MANIC MINER

SKYLAB LANDING BAY

This level was always our undoing. The random falling objects instilled such panic in our young fingers. "Nope, it's all in a set sequence," Matt explains. "If you tape record this screen, it should be the same on every version. You can learn the pattern." His mind moves on to higher things. "Skylab was launched the year before and it crashed and burned… for the usual reasons. I don't know what they're going to do with the international space station when they can't afford to refuel it. I reckon they'll send it off into a higher parking orbit when they're finished with it… too big to crash and burn." Erm, and the keys on this screen? "Oh, they're computer chips." I notice Matt's fingers are twitching and then he starts making plinky plonky noises, while indulging in some inspired 'air gaming.' He still loves his baby…

THE BANK

We both smile at the rubber cheque on this screen. "Oh, cheques bounce," says Matt, ruefully. The ladders are back, too. "Yeah, that's a trellis. Left and right are the same character. I think you could only use eight different characters on each screen. Or was it four? *Jet Set Willy* was four, I think. That was even more primitive in some ways. The keys were stored separately. Were they? I can't remember. No, no they weren't. You could have a room full of 'em. The ladder was made from reusing a trellis character. There's no flipping in this – the line has to be up the middle. If they're flipped, they have to be stored twice in memory. You bit flip it and it's a completely different number. Flipping is an expensive operation on the Spectrum. Well, horizontal flipping is. Vertical is okay. That's just a memory location." We nod and hope you coders followed all that.

SIXTEENTH CAVERN

"I'd run out of names. Or maybe I was thinking in hexadecimal and thought it didn't need one," says Matt. And what are those enemies? "Flag bugs! In the code. If flag bug equals…" He thinks for a while. "Did they do anything special? No? Perhaps they were meant to. The graphics weren't saved as files, it was done by numbers. I was putting it into video memory. I laid out the levels using the editor but I was doing the graphics on graph paper. I didn't have BOUGIE (Byte Orientated Universal Graphics Interactive Editor) then. A thing I wrote that let me run through four frames of animation, forwards or backwards. Skylab is an exception. They have eight frames for the explosion, but the normal was four." And the keys? "That was an attempt at credit cards," he says. We note the need of collecting the key nearest the exit last, lest poor Willy is trapped with a depleting air supply. "It's not good to have tricks like that. Sometimes you can't resist it," he beams.

THE WAREHOUSE

"This was another experiment that I thought was so impossibly hard it would do nicely as a killer… a boss level!" he explains with a malevolent cackle. "I only ever completed this once [Pedants note, last time we met he confessed to never having completed it]. "Now I've had more practice maybe I could do it in half a dozen goes. With moving things and collapsing floors it's very hard to measure whether something is possible. Because everything is pre-determined, if it's possible once, it's possible for everyone. That's the only way you can really know that you're not on a bum steer." The lawn mower threshers on this level changed into the Software Projects 'Impossible Triangle' logo at the same time the Bug-Bytes were ditched. Or at least, that was the plan…

AMOEBATRONS' REVENGE

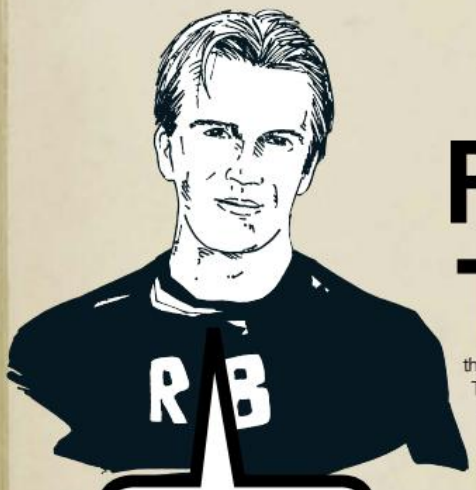
The tentacles are back in a reprise of Level 9, though they now seem to resemble the invaders from *War Of The Worlds*. "I thought they were jellyfish but yeah, maybe they have evolved into a higher life form," muses Matt. The difficulty has also grown. "This screen has all the different speeds the enemies can move at, up to four pixels a frame. I did the same sort of thing in *Jet Set Willy* for the Kitchen, but split it over two screens."

THE FINAL BARRIER

We're almost home. And with the sun setting romantically over the lake, it never looked sweeter. "Yeah, I'm playing around with colour clash here. The graphics are sort of better. I had more freedom because there wasn't any interaction. If you're on screen 20, put the title screen graphics on the top half and you don't have to worry about 'em. I did do this screen on graph paper, then cut it up into characters and worked it out in hex in my head. No art packages or scanners back then!" Is that a lucky horseshoe signifying the final exit? "Nah, it's omega – the end!" And the fish and dagger that rewarded the heroic few? "Oh, just things I'd drawn that were only eight pixels high and 16 across and I hadn't used in the game," he says casually. But Matt, at the Screenplay Festival a few years back, and admittedly after a few beers, you went on about its religious connotations, that it was your attempt to give gaming a "little bit of folklore"? He takes one last drag of his roll-up. "It might have," he smiles. "You'll find out in my next broadcast…" Ah, if only…

SOLAR POWER GENERATOR

Was this a sign of your growing environmental awareness then, Matt? He has a wild, far-off look in his eye. "No more than any other rational person. I'm worried about the environment, man…" he answers in that Neil voice. "I think this is one of the brightest backgrounds. Up till now, I think I'd only done one of the four dark colours. Mainly black." Nice solar-ray effect. Was it tricky to create? "Ooh, highly technical," he laughs. "Nah, just a little bit of code. Easy enough to program. One character wide, go down and if it hits something, go that way – always at a right angle. The Spectrum can only do right angles in colour. Get it bouncing around. They'd call it artificial intelligence now. Doesn't kill you but it sucks your air down when you're in the beam. It's sort of complicated and you do run out of air, but it's not a particularly hard level." We can't be the only ones to strongly disagree…



October 1983 – a time when newsagents were awash with new magazines, Chuckie Egg was laid, Quicksilva got friendly with giant ants and bouncing fleas, and Atari took a huge financial kicking. Richard Burton makes it his pleasure to us back to the Eighties

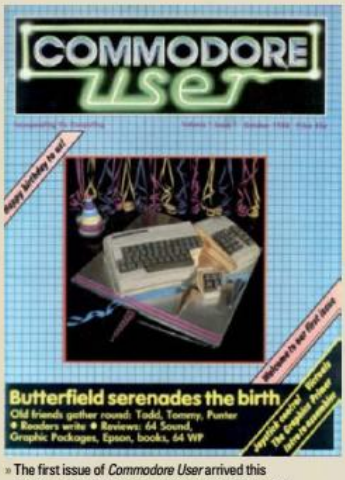
THE LATEST NEWS FROM OCTOBER 1983

The Acorn Electron starts appearing in computer stores, and Database Publications wastes no time producing the first Electron-specific magazine. The fact that the computer could get a magazine solely for its users within months of launch was testament to predictions for Electron's success.

Although only 16 pages long, the magazine featured reviews of converted games such as *Meteors*, *Starship Command* and *Monsters* – all by Acornsoft.

The rise in C64 owners following the machine's latest price cut was seen as an opportunity for Paradox Group (producer of *Vic Computing*) to add another new periodical to the newsstands. *Commodore User* was full of hardware, programming and type-ins for the bulk of its content with no software reviews at all in the first issue.

TV Gamer, a new quarterly publication, made its summer debut with an avalanche of reviews for consoles of the time. That meant pages of games for the Atari 2600, Colecovision, Vectrex and Intellivision – something no other magazine offered. The magazine gave special praise to the likes of *Hyperchase* (Vectrex), *Pitfall!* (Atari 2600), *Zaxxon* (Colecovision) and *Gorf* (Intellivision).


COMMODORE user
Butterfield serenades the birth
Old friends gather round: Todd, Tommy, Punter
Reviews: 64 Sound
Graphic Packages, Epson, books, 64 WP

» The first issue of *Commodore User* arrived this month, combining the now defunct Vic Computing. Just hope you like type-ins…

TV GAMER
THE COMPLETE AND INDEPENDENT GUIDE
all the games you can get for Intellivision Atari Vectrex Coleco
covers over 200 games
PLUS GREAT COMPETITIONS
WIN a Vectrex
WIN five new releases from Atari

» *TV Gamer*, a new magazine targeting consoles rather than computers was launched this month.

Hot on the heels of the first tape-based magazine, *Spectrum Computing*, came *16/48* published by Magnetic Magazines. Featuring the usual reviews, tips and news, it also promised original games. They were indeed original and were also quite awful.

With software sales going through the roof, Imagine Software required 30 programmers. Based on their experience they could earn between £6,000 and £10,000 a year, according to operations director Bruce Everiss.

The quality of software improved throughout the year, and with the introduction of companies such as Ultimate and titles like *Manic Miner* selling by the bucket load, new releases needed a bit more oomph than the usual production-line *Pac-Man* clones. October saw the release of several such games that can still be considered classics today.

Take *Chuckie Egg* by A'n'F Software: newly released on the Spectrum with any number of conversions lined up for other machines, the fast-moving, egg-collecting platform game was a unanimous hit.

Quicksilva, which tended to release its wares in waves rather than one at a time, did it again with ten new titles ready to hit the shelves. Among the mediocrity of *Quintic Warrior*, *Purple Turtles*, *Ring of Power*, *Trax* and *Gridrunner* were two rather better games. Licensed from Indescomp for the Spectrum was *Bugaboo (The Flea)* and a game featuring something called 'Softsolid 3D', a patent-pending game design technique that created 3D surroundings. The game, *Ant Attack*, would feature a 3D walled city called Antescher inhabited by over-sized ants. It was the first game that let you play as either sex.

Quicksilva was also in the news after a customer complained to the Advertising Standards Authority that one of its adverts stated there would be a "Free universe with every tape (offer subject to availability)". Man, there are some nutters out there…

Another impressive game was *Valhalla* by Legend. A graphical adventure with multiple characters to meet and interact with, it had a huge landscape and came complete with an equally sizeable manual. Described by some as a liveable movie, the game saw your character respond to your typed actions and with six quests to master and plenty of landscape to explore, *Valhalla* looked set to give the Melbourne House adventure, *The Hobbit*, a run for its money. Price? £14.95.

Melbourne House also began advertising *HURG* (High-level, User-friendly, Real-time Game designer), a Spectrum utility that let you create your own gaming masterpieces. It was to be called Games Designer until Quicksilva revealed its own utility bearing that same name.

» *Chuckie Egg* (Spectrum): The egg-collecting, bird-dodging platform game deserves a place in the Hall of Gaming Fame.

NEWS

OCTOBER 1983

24 October saw the start of the trial of Dennis Nilsen, one of the UK's most infamous serial killers. Although Nilsen was being tried for six murders and two attempted murders, he later told police that he had murdered 15 victims. In most cases, he had strangled the male victims and hidden the bodies under the floorboards later disposing of the bodies by burning or cutting them up into small parts and flushing them down the toilet. When neighbours complained of a foul smell coming from the drains, workmen found the remains of three bodies and Nilsen was arrested shortly after.

» A cruise missile in all its glory. A lot of moustachioed women congregated around Greenham Common because they didn't like these.

The Campaign for Nuclear Disarmament staged its biggest ever march on 23 October when an estimated two hundred thousand people descended upon London for a demonstration against stock building of Pershing 2 and cruise missiles at UK military bases such as Greenham Common. This was in response to the perceived growing military threat from the Soviet Union. There were further marches across Europe with around six hundred thousand people in west Germany protesting against Cruise missiles being brought into their country in December.

» Syrup of fig, rug, toupee, head carpeting, oil rig – there's no getting away from the fact that Connery's Bond was a slaphead.

Bond movie, *Never Say Never Again*, premiered in America and stayed at number one for the entire month. Thatsh fantashtic newsh Mish Moneypenny. Commander Bond, played once again by Sean Connery, could be seen in the movie sporting an unfeasibly unrealistic toupee, the kind that only Bruce Forsyth would consider giving head-space to.

So you could code your own games from the comfort of your own bedroom. Fame and fortune would surely follow. Sadly not. The major drawback for *HURG*-created games was that you couldn't load them independently from the utility, resulting in a very limited audience for your creation. Another dream dashed on the colour-blocked rocks of despair. On a lighter and more compatible note, Melbourne House converted and released the *Horace* games – popular on the Spectrum – onto the Commodore 64 and Dragon 32.

The bad vibes attached to Atari continued with a dreadful set of third quarter financial figures. The company had lost $180.3 million – impressively poor by anyone's standards. Still,

» How optimistic do you nedd to be to believe you'd get a free universe with each game purchase? Effing bonkers.

» *Valhalla* (Spectrum): Legend's attempt at an interactive adventure worked well but was hampered by its difficulty level.

it would cheer up all those Atari had tried to sue in the preceding months. Every sprite-like cloud has a pixelated silver lining.

A long time ago in an arcade far, far away, *Star Wars* finally appeared thanks to Atari. Prepare to be relieved of bags of ten pence pieces to get the chance to fly an X-Wing down the Death Star trench and destroy it by firing a torpedo down the exhaust port.

So, what new games were out in October 1983? You might want to buy a magazine…

Which Micro? & Software Review covered *Aquaplane* (C64, Quicksilva), *Killer Gorilla* (BBC, Program Power), *Blue Max* (Atari 400/800, Synapse Software) and *Hall Of The Things* (Spectrum, Crystal Computing).

Computer & Video Games featured reviews for *Krazy Kong* (Vic-20, Anirog), *Painter* (Spectrum, CDS Microsystems), *Hover Bovver* (C64, Llamasoft) and *Hopper* (BBC, Acornsoft), among others.

Popular Computing Weekly weighed in with *Cyclon Attack* (BBC, A'n'F Software), *Mad Martha II* (Spectrum, Mikro-Gen), *Starfighter* (Oric, Durell Software) and *Zombie Mambo* (TI99/4a, Stainless Software).

THIS MONTH IN...

Computer & Video Games

C&VG entered 3D territory this issue with several type-in listings that were supposed to work in conjunction with the 3D glasses taped to the cover. Although the concept was interesting and worked well, what was more interesting was that the type-ins were the creation of Mike "*Lords Of Midnight*" Singleton.

Sinclair User

In *SU*'s regular slot of slightly quirky Sinclair owners, October featured Robert Entwistle. When he's not splicing together two keyboards onto one ZX81 for ease of gaming in two-player games he's out Morris dancing, flicking hankies and banging sticks together. He's also very fond of playing the concertina.

Which Micro? & Software Review

As well as reviewing the 'complete package' Coleco Adam, *What Micro?* featured an interview with Imagine Software's Dave Lawson and Mark Butler, plus an insight into lead programmers Eugene Evans, John Gibson and Ian Weatherburn.

CHARTS

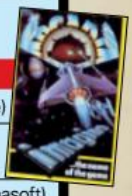
OCT 1983

DRAGON 32

1. Ring Of Darkness (Wintersoft)
2. Night Flight (Salamander)
3. Mined Out (Quicksilva)
4. Frogger (Microdeal)
5. Talking Android Attack (Microdeal)

SPECTRUM

1. Jet Pac (Ultimate)
2. Flight Simulation (Sinclair/Psion)
3. Manic Miner (Bug Byte)
4. Tranz Am (Ultimate)
5. Scrabble (Sinclair/Psion)

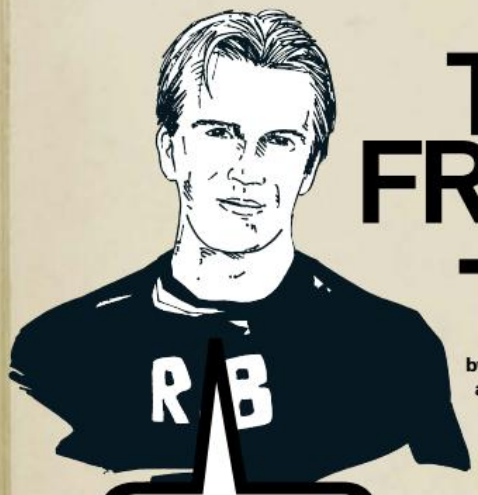


VIC 20

1. Arcadia (Imagine)
2. Skyhawk (Quicksilva)
3. Gridrunner (Llamasoft)
4. Panic (Bug-Byte)
5. Wizard & The Princess (Melbourne House)

MUSIC SINGLES CHART OCT '83

1. Karma Chameleon (Culture Club)
2. Modern Love (David Bowie)
3. They Don't Know (Tracey Ullman)
4. Dear Prudence (Siouxsie & The Banshees)
5. New Song (Howard Jones)



November 1983 – the Ace is not so ace, Texas gives up, the Taiwanese invent Einstein, Oric Computing begins, Comx 35 ends and Commodore reveals the greatest piece of code ever written… ever (well, apparently). Richard Burton stifles laughter…

THE LATEST NEWS FROM NOVEMBER 1983

The makers of the Jupiter Ace went into receivership after poor sales. Launched in 1982 by Jupiter Cantab, the Ace was a silent, black and white Forth-driven machine. Steve Vickers and Richard Altwasser, who were the same guys responsible for designing the Spectrum, developed it. With a lack of software and the Spectrum becoming more affordable, sales of the Ace suffered badly and the inevitable decline followed.

Atari was keen to branch out into other areas after suffering some major financial difficulties during the year, so it formed a new software division called Atarisoft. This division would concentrate on releasing many of the company's biggest games onto other formats. Among the classic titles to get the conversion treatment were *Pac-Man*, *Centipede*, *Robotron* and *Dig Dug*. Although this was widely seen as a positive move for the industry and Atari, its pricing structure left many gamers scratching their heads and hiding their wallets.

It was revealed that Atari's new games, for machines like the Spectrum and BBC, would cost £14.95. The first being *Pac-Man* for the Spectrum, due out in November. Carts for the C64 and VIC-20 were priced at around £29.95. With existing games on tape costing about £5.95 and Commodore cartridge games priced at approximately £10, Atarisoft may have shot itself in the foot before a game was even released.

» The Jupiter Ace – not from Jupiter and not that ace. Lack of software and falling prices signalled the end.

"Gobble" "Gobble" "Gobble" "Gulp"
Now that Atari make games for your computer, our rivals don't stand a ghost of a chance.
ATARISOFT

» Atari released software for other machines and overpriced its wares severely. Were the money problems *that* bad at Atari?

Accompanying the news of the game releases was the announcement that its newest machine, the Atari 600XL, would be hitting the shops in the UK soon. It was priced at £159 and considered a direct replacement for the Atari 400. An 800XL, set to supersede the standard 800, would also be released by the end of the month priced at £250.

Just a week after Texas Instruments announced it would not be upgrading or replacing its aged TI-99/4a computer, the company decided to completely withdraw from the home computer market. Production of the TI-99/4a would cease immediately, with the development of new products also being halted. The machine never gained a foothold in the UK, although it did attain relative success in the US. Dreadful financial figures were to blame, with a loss of $110.8 million in its third quarter. If nothing else, Texas Instruments was certainly giving Atari a run for its money in the haemorrhaging money stakes.

» A lot was resting on the Atari 600XL and its bigger brother, the 800XL – they were Atari's financial rescue package.

» The TI-99/4a was ceasing production. Luckily the cartridge slot could also double as a toast warmer. Now that's future-proof…

A Taiwanese company announced plans to launch a brand-new machine that, refreshingly, would be designed and built in Britain. The machine would feature a full-stroke keyboard, 64K RAM, colour monitor and a three-inch disk drive with its official launch planned for early 1984. Tatung and its new machine, the Einstein, appeared to have a computer with the 'oomph' to take on most of the existing systems. Still, priced at the eyebrow-raising price tag of £499, it could also be considered a tad pricey for the casual gamer.

The Comx 35 computer from Hong Kong was attempting to infiltrate the UK market with its low-cost games machine (with no games available at the time). Unfortunately, it seemed to have the shelf life of a custard cream. UK distributors found that so many of the computers were being sent back due to faults, that they decided to stop sales of the

» The Tatung Einstein: A great heap of a machine, but surprisingly good to use. It could emulate the Spectrum, too.

NEWS

» Not only did the thieves steal the bullion, they also pinched the manager's biscuits. However, they carelessly dropped a few on the way out.

NOVEMBER 1983

26 November saw the UK's biggest robbery when £25 million in gold bullion was stolen from Heathrow Airport. 6,800 gold bars, weighing in at around three tons, were taken along with hundreds of thousands of pounds' worth of diamonds while they were being stored at the Brinks Mat warehouse. Despite the £2 million reward for information, and the fact that the gold bars were all marked with refiner's stamps, most of the gold has never resurfaced. Even with the ongoing investigations, only three people were jailed for their part in the Brinks Mat robbery. Police speculation suggested that as many as 12 other individuals were involved.

On 16 November, there was another unhappy episode in English football as fans rampaged in Luxembourg. This was after the England team had failed to qualify for the 1984 European Championships. Even though they beat Luxembourg 4-0 on the night, other scores went against them, which led to elimination… and subsequently, violence. Drunkenness, fighting, pilfering and, in most cases, a subtle blend of all three, led to over 50 fans being arrested. It started after the final whistle, with fighting in the stadium, which later spilt out into the city centre where cars were overturned and windows smashed. Not a great day for England – on or off the pitch.

» Refreshes the parts other beers cannot reach… unless you're cleaning your drains, in which case it's great for shifting crud.

9 November saw Alfred Heineken, beer magnate and brewer of tasty cold beverages, kidnapped along with his chauffeur. A ransom of 35 million guilders (16 million euros) was paid and they were safely returned after 21 days in captivity. The kidnappers were later caught, so that was nice. Beers all round?

» It was unreliable, but things could've been worse, it might not have had any software… Wait a sec, *software*, you say?

machine. It was later discovered that the Comx 35 had a failure rate of 55 per cent. That actually made Clive Sinclair's early Spectrums seem positively reliable…

Commodore boisterously claimed it had "the most amazing piece of software in the world" and was ready to release it on the unsuspecting public. If you were expecting something that would cause you to have a life-changing experience then you would have been bitterly disappointed. The epoch-shattering piece of code was *International Soccer* – yes, yes, we know – and it was due to be released before Christmas on cartridge.

While many deemed it a rarity that Sinclair Research had managed to deliver one of its products on time, after months of speculation about its appearance the Sinclair flat-screen pocket TV was unveiled. It measured five by three inches, had a two-inch black and white screen and ran off a six-volt Polaroid lithium power pack, all for just £79.99.

For those who love nothing better than going west, east, east, inventory, north and south-east, a new magazine for adventure-game enthusiasts made its first appearance this month. *Micro Adventurer* covered everything adventure related, with the help of long-time aficionado Tony Bridge. Despite the fact that the magazine was very informative and a great read, it suffered because it covered a small, specialist area in a niche market. It did incredibly well to last 17 issues.

Another new publication launched this month was *Oric Computing*. The Oric-1 was somewhat underrated and it never really collected the fan base that other systems had in the UK. Regardless of that fact, with blinding optimism, Oric Computing was born. It was never the most exciting magazine in the world, nor claimed to be, dedicating most of its space to type-in programs. Despite a somewhat heroic effort, five issues later it was dead.

Parker Brothers announced some interesting titles for release over the forthcoming months, which included several licensed titles. The console game developer's autumnal portfolio featured two new *Star Wars* games, *Popeye*, *Lord Of The Rings* and *Spider-Man*. Although primarily targeting the Atari 2600, versions of those games would also be released on ColecoVision and Philips G7000 Videopac.

The *CVG* reviews section delved into an interesting cross-section of console formats, including: *Donkey Kong Jr* (Nintendo, ColecoVision), *Battlezone* (Atari, Atari 2600), *Q*Bert* (Parker Brothers, ColecoVision) and *Happy Trails* (Activision, Intellivision).

For the computer owners there was: *Multitron* (Sumlock, VIC-20), *Donkey Kong* (Severn Software, Oric-1), *Frogger* (Microdeal, Dragon 32) and *Tranz Am* (Ultimate, Spectrum).

Sinclair User magazine had a small band of games on review this month covering *Hard Cheese* and *Road Toad* (both DK'Tronics), Vortex (JK Greye), *Galaxy Attack* (Sunshine Books) and *Styx* (Bug Byte). All in all it's a very average set of games. The software houses must be keeping the good stuff back for the Christmas sales push and Santa's sack…

THIS MONTH IN...

Popular Computing Weekly

Quicksilva was a popular topic for features in the computing press this month. Even the weekly magazines, such as *Popular Computing Weekly*, got in on the act. It featured an interesting interview with Sandy White, creator of Quicksilva's enormous hit *3D Ant Attack*.

Micro Adventurer

With its first issue out this month, *Micro Adventurer* aimed to please as many adventure fans as possible. It could explain the interesting interview with the creators of *The Adventure Game*, which featured the fantastically hi-tech BBC Micro-generated *Vortex*. Gronda.

Which Micro? & Software Review

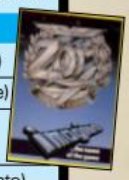
To prove that software houses do exist outside Merseyside, *Which Micro?* interviewed some guys at Quicksilva, including Mark Eyles and Rod Cousins. After starting small, Quicksilva built itself into one of the leading software houses of the early-Eighties.

CHARTS

NOV 1983

DRAGON 32

1. Cuthbert Goes Walkabout (Microdeal)
2. Night Flight (Salamander)
3. Ring Of Darkness (Wintersoft)
4. Space War (Microdeal)
5. Champions (Peaksoft)



SPECTRUM

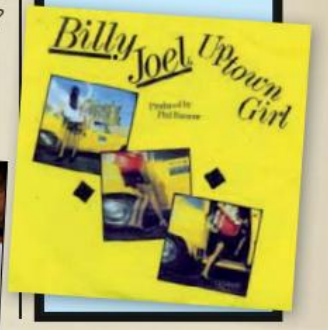
1. Zzoom (Imagine)
2. Jet Pac (Ultimate)
3. Manic Miner (Bug Byte)
4. Tranz Am (Ultimate)
5. Flight Simulation (Sinclair/Psion)

VIC-20

1. Arcadia (Imagine)
2. Gridrunner (Llamasoft)
3. Wacky Waiters (Imagine)
4. Skyhawk (Quicksilva)
5. Anti-Matter Splatter (Rabbit Software)

MUSIC SINGLES CHART NOV '83

1. Uptown Girl (Billy Joel)
2. All Night Long (Lionel Ritchie)
3. Say Say Say (Paul McCartney & Michael Jackson)
4. Cry Just A Little Bit (Shakin' Stevens)
5. Puss 'N Boots (Adam & The Ants)



THE MAKING OF...

DRAGON'S LAIR

In a time when arcade games hosted basic graphics, there was one game that changed peoples' perspectives of games indefinitely. That game was Dragon's Lair, the first of its kind to feature movie quality visuals and interactive gameplay. Kim Wild talks to Gary Goldman about this laser disc classic.

For those unfamiliar with *Dragon's Lair*, the game starred, Dirk the Daring, a bumbling oaf who has to enter a booby-trapped castle to rescue his girlfriend from a ferocious dragon. Unlike other arcade games of its time, or indeed our time, *Dragon's Lair* was more like an interactive movie, where the player would direct the main character in a series of sequences, than a platformer where you'd assume complete control. The outcome of each cartoon scene is determined by entering the right move at each decision point; make the wrong decision and you'll face immediate death.

The original concept came from Rick Dyer of Advanced Microcomputer Systems (AMS). The company had been working on a fantasy game for two years but wanted to make a more visual masterpiece. After methods of animation including slideshows and a tape deck, cash till roll and giant rolodex failed to re-create a hand drawn style, Rick Dyer began to look elsewhere. He discovered laser disc: a brand new optical storage

"WE CHANGED THE CONTINUITY OF GAME-PLAY, WHICH UPSET THE WRITERS AND STORYBOARD ARTISTS OVER AT RICK'S SHOP"

medium that had the ability to replicate movie quality animation. Disc access was random and chapter-based so it allowed almost instant access to any area of the disc. One visit to the cinema later, and the idea for a partnership formed. Gary Goldman, a member of the production team for Don Bluth, recalls how this came about. "He [Dyer] had seen The Secret of NIMH in the theatre with his wife, Jan, and decided then that we should be the team to do the animation. He had already put a team of writers and artists together to write a game script and to storyboard the game in sequences. His plan was for a three-way partnership, with his team doing pre-production and the computer programming, Bluth Group was to do the actual production and Cinematronics to do the distribution."

However there were a few problems – namely a question of financing. "Each partner-company was to finance its own part of the deal," explains Goldman. "The problem for us was that we didn't have any capital. Our studio operations had just been interrupted by the Screen Cartoonists union strike, and our backers pulled out, leaving us with no cash flow. So we had to borrow cash to get involved, from friends, relatives, whoever we could convince that this was a solid idea. At one point we even borrowed from Rick Dyer's and Jim Pearce's companies."

DEVELOPMENT ISSUES

Once financial issues had been resolved, it was time to make a start on development. Although Rick Dyer's team had designed their own characters and storyboards, many of these had to be discarded, as they didn't meet the required standards. In the end, character design and animation was left entirely to Don Bluth's production team while Dyer and his loyal designers kept working on ideas and programming the links between each scene. "We changed the continuity of gameplay, which upset the writers and storyboard artists over at Rick's shop," recalls Goldman "We basically re-storyboarded the game with new designs and sometimes completely different ideas. At the time Rick was very good about keeping his crew's objections from us, letting us plod on."

Daphne and Dirk also saw an overhaul. Dirk was remodelled as "a clumsy oaf, big feet and hands and not too smart" while Don Bluth spent considerable time drawing Daphne in various seductive poses, inspired by Gary Goldman's old collection of Playboy magazines. It's a fact Goldman recalls vividly. "It was odd walking by Don's office with him in there at the drawing board surrounded by several, open, Playboy magazines. In the end, Don put Daphne in a very revealing one-piece "thong" swimsuit with a sheer veil that partially covered her." Don Bluth was also responsible for designing the 50 different humorous ways in which Dirk could die including being eaten, squashed and disintegrated.

The script was another area that was largely affected by Don Bluth's team. As Dirk was the main character and dialogue might prove to cause difficulties with foreign language translation, it was scrapped in favour of grunts, groans and screams. Due to lack of funds, all voice acting was dealt with in-house with editor Dan Molina providing Dirk's expressions. Daphne however has to speak as she dispenses crucial information at the big finale featuring the fight with Singe the dragon. Stepping up to the role of air-head Daphne was Key Clean-up Supervisor, Vera Lanpher.

ENTERING A 3D WORLD

In 2002, Rick Dyer, Gary Goldman and Don Bluth collaborated on a sequel to the franchise and concocted *Dragon's Lair 3D*. Released on PC, Xbox and GameCube, *Dragon's Lair 3D* saw Dirk enter a trap-infested castle to rescue the beautiful Daphne. Sadly, the game was missing many of its trademark death sequences, something that Goldman does regret. "We were disappointed that some of the humorous death situations could not be incorporated. We had many discussions about it and it was going to delay production and send costs through the roof." The game was condemned by the specialist press but still seemed to garner a following. "We have had a ton of fan mail that contradicts the critics' opinions," recalls Goldman. "But then, those that wrote in are probably die-hard *Dragon's Lair* fans. And, they were thrilled to see a revived Dirk in 3D."

» *Dragon's Lair 3D* boasted the same traditional animation of the original but with more freedom to move

IN THE KNOW

- **PUBLISHER:** CINEMATRONICS (US) ATARI (EUROPE)
- **DEVELOPER:** AMS
- **RELEASED:** 1983
- **GENRE:** ARCADE GAME
- **EXPECT TO PAY:** £500+

THE MAKING OF... DRAGON'S LAIR

"IT WAS ODD WALKING BY DON'S OFFICE WITH HIM IN THERE AT THE DRAWING BOARD SURROUNDED BY SEVERAL, OPEN, PLAYBOY MAGAZINES"

» *Dragon's Lair* was hyped to be the future of the Arcade game industry but sadly this wasn't to be

...Thanks to Classical Animation and Laser Disc Technology

THE ARTISTS

WHAT IS CLASSICAL ANIMATION?

DOUBLE OPPORTUNITY

» 22 minutes of footage featured in the game all created with classical animation

DEVELOPER HIGHLIGHTS

TIME TRAVELLER
SYSTEMS: ARCADE, DVD
YEAR: 1991

THAYER'S QUEST
SYSTEMS: ARCADE, DVD
YEAR: 1984

THE FINAL PRODUCT

With AMS aiming to have the first laser-disc title in arcades, work on *Dragon's Lair* had to be swift. After initial development in October 1982, animation was started in January 1983, while Rick's team managed to compile three colour sequences by March for the Chicago Game Show. Around 130 artists and technicians were involved in development and the final product was finished in June, ready to ship to arcades in July.

In Europe, *Dragon's Lair* was licensed to Atari for production and manufacturing and the cabinet design differed to the American edition.

AMS field-tested the game at the Malibu Grand Prix El Monte, California and were staggered by the impact. Over 200 people were watching in amazement at the game's animation and the same thing was occurring at Cinematronics' own test in San Diego.

Its success in arcades was unprecedented, helped further by the cheaper price set by Cinematronics of 50 cents. As laser disc was an expensive technology in those days (the player alone was $1,000) the lower price gave the incentive for arcade owners to stock the machine. The immense popularity of the game meant many recouped the cost within a week. "When you went to an arcade, there was always a crowd around the *Dragon's Lair* machine and a line of people waiting to play the game. Many of the arcades placed extra monitors on top of the game cabinet so the crowd could see the animation."

Almost overnight, *Dragon's Lair* became a phenomenon leading to merchandise such as lunch boxes, underwear, stickers and board games, with even a cartoon series launching in 1984. Inevitably, the game was ported to over 18 computer formats although none of those had any input from either company barring artwork.

» A still cell of Dirk the Daring ready to confront the enemy

» A selection of drawings depicting Dirk's foe, the evil dragon Singe in a variety of poses

Such success naturally meant a sequel, so a follow-up, *Space Ace*, released in 1984, was born although *Dragon's Lair* devotees would have to wait until 1991 to see *Dragon's Lair II* hit the arcades. Scenes that were left out of *Dragon's Lair II: Time Warp* would eventually see an appearance in *Dragon's Lair III* on PC. However, the popularity of laser-disc games trailed off and the sequels failed to capitalise on the original's success. Laser-disc players were notoriously unreliable, frequently breaking and some of the parts had been discontinued, making them difficult to repair.

The limited nature of the gameplay also meant that the novelty of astounding visuals soon wore off. Goldman suggests why the sequels lacked the same impact on the market. "*Dragon's Lair* was a 'first', a breakthrough on the imagery for arcade games. Even though *Space Ace* was faster paced and had more spectacular imagery, the audiences had seen the first and were thrilled by it. Also, the arcade industry was in decline – *Dragon's Lair* sparked a momentary positive blip on the [business] screen, but didn't sustain it. With a declining attendance at the arcades, owners were avoiding financial risk; these arcade games were more expensive and not as many *Space Ace* machines were purchased by arcade owners. With regard to *Dragon's Lair II*, production was actually stopped in March of 1984 with it 100 per cent animated but only about 75 per cent in colour. The arcade industry was going

» Riding this mechanical horse was just one of the many exhilarating moments from Dragon's Lair. Giddy up!

» Dirk got himself into all sorts of difficult situations - death usually followed...

» A storyboard planned out depicting Dirk trying to save Daphne from Singe the Dragon

» Detailed drawings and descriptions were created months before animation proceeded

down and Cinematronics would not complete the game. The game would not be completed until 1989, financed by Leland Corporation, a company that bought out Cinematronics."

THE LEGEND LIVES ON

Although the arcade game exists solely in the hands of devout collectors, the legacy of *Dragon's Lair* lives on. The *Dragon's Lair* Project is the largest resource dedicated to laser-disc based games and is the first port of call for anyone seeking out original versions of *Dragon's Lair*. The DAPHNE emulator is also available so fans and retro gamers can once again experience the thrills of the original all over again.

Companies like Digital Leisure (http://www.digitalleisure.com) have made it their quest to bring *Dragon's Lair* to as many platforms as possible, 20 years after the release of the original. Digital Leisure first acquired the rights to *Dragon's Lair, Space Ace* and *Dragon's Lair II: Time Warp* in early 1997 and then went on to completely re-write the code to accurately copy the original arcade version. To squeeze such information onto a DVD however, requires some work as Paul Gold explains. "To port the classic laser-disc games to DVD and the compatible formats requires some serious finesse. Using a DVD authoring system like the ones a Hollywood studio would use to create DVDs for their movie releases, we are able to recreate the classic arcade experience."

Any regrets? Gary Goldman only has a few. "One thing is that there was a plan for, Chris Stone, the composer of the *Dragon's Lair* music to go to London to use a 40-piece orchestra to record the musical underscore for *Dragon's Lair II*. I wish we could've done it that way. Also, we have a script for a feature film of *Dragon's Lair*. I regret that we haven't been able to get the movie into production – and there are a lot of fans out there waiting for it. We've had some great meetings with the major studios. They know the title and like the script but no one has actually said yes. Think good thoughts. It may just happen."

"AROUND 130 ARTISTS AND TECHNICIANS WERE INVOLVED IN DEVELOPMENT AND THE FINAL PRODUCT WAS FINISHED IN JUNE"

» The death screen will be familiar to those not quick enough to dodge traps on screen

» The amusing death sequences kept players purposefully dying just to see the next animation.

Thanks to Jeff Kinder from The Dragon's Lair Project (http://www.dragons-lair-project.com/) for the interview and providing artwork and images for this article.
Credit goes to Jason Finn for offering additional information and images.
Thanks to Paul Gold of Digital Leisure for answering our questions.
Also thanks to Gary Goldman for taking the time out to be interviewed.

OTHER GAMES IN THE SERIES:
Other Games in the Series: Dragon's Lair
Dragon's Lair II: Timewarp
Dragon's Lair III: Curse Of Mordread
Dragon's Lair 3D
Space Ace

INTERVIEW WITH JEFF KINDER

Jeff is responsible for the Dragon's Lair Project. Retro Gamer asked some questions.

Retro Gamer: When did you set up the *Dragon's Lair* Project?
Jeff Kinder: The site went online on August 25, 1997. It had three pages: my story of how I restored my *Dragon's Lair* machine, History of *Dragon's Lair, Space Ace,* and Thayer's Quest page, and an online version of the *Dragon's Lair* owner's manual. Today there are 900+ pages and the site has received near three million hits.

RG: What is it about *Dragon's Lair* and the sequels that are so appealing?
JK: Originally, it was the graphics/animation. Back in 1983 arcade game graphics were not what they are today. When *Dragon's Lair* came out, it was so different from anything ever seen before.

RG: Have you ever met the creators?
JK: Yes, I've met all four: Don Bluth, Gary Goldman, Rick Dyer, and John Pomeroy. They are really nice guys and they appreciate what Dave Hallock and I have done with the site to keep the memory of *Dragon's Lair* alive.

RG: How can readers of Retro Gamer contribute?
JK: We are always looking for more information to add to the website to help keep the games remembered for a long time to come.

December 1983 – 1 million Spectrums can't be wrong, the ITV Micro almost materialises, Mr Wimpy goes large, the Software Club starts, and Jet Set Willy arrives to enlighten/ plague your lives forever. Richard Burton goes off to find Maria…

THE LATEST NEWS FROM DECEMBER 1983

» *Manic Miner*, a game split between two companies and three different inlays.

Sinclair claims that 9 December was the day the millionth Spectrum rolled off the production line in Dundee. It still had a little way to go to catch the ZX81 which was reported to have sold 1.1 million machines, but with sales averaging 50,000 units a month, Spectrum would soon reach that target.

Liverpudlian coder Bug-Byte was coming to terms with the loss of its main cash cow, *Manic Miner*. Former employee Alan Maton left the company in August to start a new software house called Software Projects. The game's author, Matthew Smith, also left to become a Software Projects director, taking his creations with him after revoking Bug-Byte's licence to produce the game.

The first run of Software Projects' *Manic Miner* hit shops in November, but Bug-Byte was left with its remaining stocks to sell and no licence to manufacture further copies. With two companies selling the same game, it would be interesting to see who had the better Christmas sales figures.

A bigger blow to Bug-Byte was that Smith's new game also went to Software Projects with him. *Jet Set Willy* was due for an early-December release on the Spectrum with the C64 conversion appearing just before Christmas. The C64 version of *Manic Miner* was also ready for release. Good times for Software Projects, not so for Bug-Byte.

Ironically, Bug-Byte released its latest game, *The Birds And The Bees*, for Spectrum this month. Featuring Boris Bee from Birkenhead (no really) the graphics were Smith's final Bug-Byte hurrah before legging it with *Willy* in hand. He was not credited for his work and, presumably, not paid either.

The BBC's rival TV broadcaster, ITV was planning another challenge. The Independent Television Companies Association were to take a ballot in December to decide whether to launch their own ITV-branded computer. A machine was already in place, Transam Computers had designed a Z80-based machine with 64K and the usual specs priced at £399, so everything was set for the ballot. The vote took place on 12 December and the independent TV companies voted not to proceed with the ITV Micro.

The ever expanding Ocean led software down a foreboding and inevitable path, with the first of many licensed tie-in games. Be it TV, film or, as in this case, a pulverised clump of lard and beef, licensed games would become part and parcel of the 8-bit gaming boom. Ocean introduced the world of computer-based fast-food gaming to the public with *Mr Wimpy* – The Hamburger Game (The Greatest Game Under The Bun).

» ITV was on the verge of producing its own computer, which may or may not have looked like this.

The Software Club began advertising this month with full-page ads in the computing press, although most people remember its later efforts with the flyers inserted into various magazines offering three games for 99p each, on the proviso you buy six full-price games a year from its monthly catalogue. The problem was the games available were usually less than brilliant and slightly overpriced. *OutRun* on Amstrad still ticks us off.

Also being heavily advertised was 3-Deep Space by Postern. Available for a range of 8-bit machines, the game promised true 3D stereoscopic gaming. That's a fancy way of saying you get to wear a pair of those cardboard glasses with the red-and-blue plastic lenses while playing. The game itself wasn't great and the 3D effect was less than impressive. Thankfully, the programmer, Mike Singleton, left Postern and started writing for *Beyond*, producing the wonderful *The Lords Of Midnight*, among others.

Salamander Software announced a licensing agreement with Llamasoft's Jeff Minter to convert his extensive Vic-20 back catalogue onto other machines including Dragon 32, Spectrum and BBC Micro. The first wave of conversions would include *Laser Zone*, *Hover Bovver*, *Gridrunner* and *Matrix*.

Minter was adding the finishing touches to *Revenge Of The Mutant Camels* on C64,

» *Mr Wimpy* (Spectrum): The meat-based fast-food licensed game was okay, but it didn't come with fries.

NEWS

DECEMBER 1983

On 8 December the House of Lords took a vote on whether or not to allow television cameras into their chamber to televise live debates for the first time. With an overwhelming majority, the Lords voted yes and immediately pressure was exerted on the House of Commons to follow suit. Debates raged about the pros and cons of such a decision before they finally succumbed to the television cameras almost six years later.

» Dennis Wilson, founder Beach Boy, died at just 39 years old.

27 December saw an impressive show of seasonal goodwill to all men, when Pope John Paul II took a festive trip to prison to visit Mehmet Ali Agca. This was the man who attempted to assassinate the Pope in 1981, and although the Pope was seriously hurt in the incident, he still found it in himself to pardon him. However, he drew the line at giving him any Christmas presents such as a Terry's Chocolate Orange(or a novelty Pope on a Rope soap).

» He's soapy, he's Popey, he's hanging off a ropey – it's Pope On A Rope Soap! Available from shops… maybe… Don't take our word for it.

The sad news that founder member of The Beach Boys Dennis Wilson had died came on 28 December. The only member of the band to actually partake in any surfing activities, Wilson, ironically, drowned during a swim from his boat moored in Marina del Rey, California, while under the influence of alcohol. His good vibrations ended at the tragically young age of just 39.

» Buy any three for 99p and we'll send you a wafer-thin catalogue of stuff companies can't sell.

For wannabe programmers, relief came in the form of Gilsoft's new adventure-creation software, The Quill. Who'd have thought that a utility from a small indy company would spawn an adventure software industry of its own in the coming years. The likes of Zenobi, 8th Day Software, Level 9 and Melbourne House all released software produced by The Quill.

Not a month seems to go by without a new publication being produced. *Dragon World* for the Dragon machines had a feature on the *Dragon 64* and type-ins aplenty leaving space for little else in its mere 16 pages of coverage (including covers). In a similar vein, the first issue of bi-monthly magazine *Acorn Programs* which was due just before Christmas. The next game after that was *Megagalactic Llamas Battle At The Edge Of Time* for Vic-20.

» Two games from Llamasoft: one ready for release and one being worked on for Vic-20 owners to savour in the future.

» The Quill spawned a market for adventurers to write and sell their own software.

In the computing press, *C&VG* reviewed *Bewitched* (Imagine, Vic-20), *Pole Position* (Atari, Atari 400/800), *Ant Attack* (Quicksilva, Spectrum), *Barmy Burgers* (Spectrum, Blaby), *Purple Turtles* (Quicksilva, C64), *Pooyan* (Datasoft, Atari), *Stix* (Supersoft, C64) and *Zalaga* (Aardvark Software, BBC Micro), which was *C&VG*'s Game Of The Month.

The winter edition of *TV Gamer* added to its directory of console games, including new and recommended releases. Titles that fell into both categories included *Enduro* (Activision, Atari 2600), *Ghosts Manor/Spike's Peak* (Xonox, Atari 2600) – a double-ended cartridge (two games for the price of one), *Donkey Kong Jr* (CBS Electronics, ColecoVision), *Fortress Of Narzod* and *Webwarp* (both MB Electronics, Vectrex) and *Pinball* (Mattel Electronics, Intellivision).

Sinclair User reviewed a select cross-section of Spectrum games including *Corridors Of Genon* (New Generation), *Manic Miner* (Bug-Byte), *Invasion Of The Body Snatchers* (Crystal Computing), *Pyramid* (Fantasy Software) and the adventure *Oracle's Cave* (Doric).

THIS MONTH IN... CHARTS

Computer & video games

C&VG's interesting arcade section focused on laser-disk games this month – which naturally meant a look at the new *Dragon's Lair* game from Don Bluth. Needless to say they wet their knickers, although they did point out it was expensive to play and dead slow. They forgot to mention the lack of gameplay…

Micro Adventurer

For the more adventurous gamer, *Micro Adventurer*'s second issue featured an article on cult TV show *The Prisoner*, seemingly attempting to unlock the meaning of the episodes and deciphering the plot twists like a text adventure. Fancy a Number Two? Just had one thanks…

Sinclaire User

SU interviewed Sandy White, sculptor and creator of *Ant Attack*. Although Quicksilva had released the game, and made lots of cash, initially Sinclair Research was offered the title but was unable to view the video tape presentation White had sent them. Good for Quicksilva, pants for Sinclair.

DEC 1983

ATARI 2600

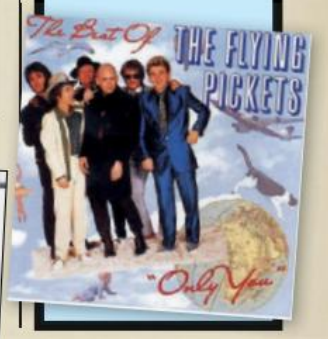
1. Pole Position (Atari)
2. Enduro (Activision)
3. Battle Zone (Atari)
4. River Raid (Activision)
5. Donkey Kong (CBS)

SPECTRUM

1. Atic Atac (Ultimate)
2. The Pyramid (Fantasy)
3. Flight Simulation (Psion/Sinclair)
4. Manic Miner (Bug-Byte)
5. Ant Attack (Quicksilva)

BBC

1. Planetoid (Acornsoft)
2. Rocket Raid (Acornsoft)
3. Hopper (Acornsoft)
4. Alien Swirl (Program Power)
5. Monsters (Acornsoft)

MUSIC SINGLES CHART NOV '83

1. Only You (Flying Pickets)
2. Love Of The Common People (Paul Young)
3. Hold Me Now (Thompson Twins)
4. My Oh My (Slade)
5. Let's Stay Together (Tina Turner)